



Watford 20mph Feasibility Study

Watford Borough Council
20's Plenty for Watford

November 2018

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Executive Summary

The purpose of the study is to review options for the possible future delivery of 20 mph schemes in Watford, looking at the costs and benefits of each. The study considers the compatibility of different options with national guidance and Hertfordshire County Council's Speed Management Strategy. It also reviews the experience of other local authorities who have implemented 20 mph schemes on a larger scale.

The study has been commissioned by Watford Borough Council on behalf of the study Steering Group, a partnership of the 20's Plenty for Watford group and Watford Borough Council. This follows a successful bid by the partnership for a grant from the Hertfordshire Police and Crime Commissioner's Road Safety Fund.

The findings of this study do not represent designs for a future 20 mph scheme and it is recommended that further site assessment be undertaken prior to progressing with any future schemes. The need for, and the design of, any such schemes would be determined by Hertfordshire County Council as the Highway Authority for Watford following detailed assessment and public consultation.

Subject to the above, the study recommends that the more recent approach of introducing 20 mph schemes in Watford without significant physical traffic calming is continued.

In addition, it is recommended that consideration be given to introducing 20 mph schemes over larger areas. Such an approach is expected to be substantially more cost efficient and require less staff and cost resources with other towns and cities having introduced signed-only limits across large areas at lower cost per km than for smaller schemes in Watford.

While issues of compliance will need to be addressed, extending this to some busier routes would also warrant investigation, as experience elsewhere has indicated a greater reduction in traffic speeds and decrease in road traffic collisions.

Acknowledgement

Mott MacDonald would like to acknowledge the time spent by 20's Plenty for Watford and Hertfordshire County Council officers in providing background information and data for the study. The report authors are also grateful for the time of officers from Brighton & Hove City Council, Croydon Council and Islington Council and the valuable information they have shared.

1 Introduction

1.1 Purpose of the Study

This feasibility study follows a successful bid by 20's Plenty for Watford and Watford Borough Council for a grant from the Hertfordshire Police and Crime Commissioner's Road Safety Fund.

Historically, Hertfordshire County Council (HCC) has implemented 20 mph restrictions in small areas known as zones. This process has been incremental over several years whereas in recent years a number of towns and cities elsewhere in the UK have introduced area-wide 20 mph limits. This follows changes to national signage regulations in 2011 and Government guidance in 2013, which made it easier and more cost effective for local authorities to introduce 20 mph limits over larger areas.



Watford Borough Council have noted the desire of residents in other areas of the town to see 20 mph streets in their area. At the same time, 20's Plenty for Watford have suggested that the recent evidence from elsewhere indicates that there may be a more cost-effective way of implementing 20 mph speed restrictions. This would potentially allow for more areas to be included over a shorter period where there is support for this.

Therefore, the study aims to consider the costs and benefits of wider 20 mph schemes and the different options for delivery. The purpose is not to design any schemes and the findings do not mean that the speed limit on the streets considered will be reduced to 20 mph as a result of this study. This would be subject to detailed design, public consultation and available funding. It should also be noted that any future schemes would be for determination and implementation by HCC who are the Highway Authority for Watford.

1.2 Definitions

Table 1 provides the alternative definitions for 20 mph schemes applied by the Department for Transport (DfT) and HCC.

Table 1: Definitions

Type of Scheme		DfT Definition	HCC Definition
20 mph Zone		<ul style="list-style-type: none"> Normally cover more than one road Require traffic calming or repeater signage so no part of the zone is less than 50m from either Beginning and end indicated by terminal signing 	<ul style="list-style-type: none"> Cover more than one road Can be implemented with or without physical measures Beginning and end indicated by terminal signing
20 mph Limit		<ul style="list-style-type: none"> Apply to individual roads or larger areas Signed with terminal and at least one repeater sign¹ Can be implemented with or without physical measures 	<ul style="list-style-type: none"> Applies to a single road Signed with terminal and at least one repeater sign Can be implemented with or without physical measures

¹ This requirement was removed by the updated Traffic Signs, Regulations and Directions (2016). See Chapter 2 for further details.

Source: DfT Circular 01/2013 and HCC (2014) Speed Management Strategy

As can be seen, the definitions vary principally on whether limits can be applied to multiple roads, which potentially has implications for the level of minimum signing or traffic calming features required. HCC's Speed Management Strategy (SMS) acknowledges the difference but states the term 'zone' is used to consistently denote an area within which multiple streets are 20 mph, whether or not the design of these is consistent with the DfT definition of a zone. However, to allow consistency with national guidance and distinguish between the available options, this study will apply the DfT definitions where appropriate.

1.3 Report Structure

The remainder of this report is structured as follows:

- Chapter 2 provides further details of the relevant national and local policy;
- Chapter 3 gives an overview of the study methodology;
- Chapter 4 considers the existing 20 mph zones in Watford;
- Chapter 5 provides an overview of the experience from elsewhere;
- Chapter 6 analyses the different options for the possible future delivery of 20 mph schemes in Watford, including the costs and benefits;
- Chapter 7 provides an overview of funding options for the delivery of 20 mph schemes; and
- Chapter 8 presents the report findings.

2 Policy Context





This chapter provides an overview of the national and local policy applicable to the implementation of 20 mph zones and limits.

2.1 National Policy

Since 2011, the Department for Transport (DfT) has amended legislation and provided revised guidance which makes it easier for local authorities to introduce 20 mph schemes. In particular, this is by reducing the minimum level of traffic calming that is necessary and therefore meaning 20 mph zones can be introduced at lower cost.

Signage regulations are provided by the Traffic Signs Regulations and General Directions (TSRGD) (2016). Signage installed on the public highway must comply with the requirements set out within TSRGD in order to be legally enforceable. A summary of those signs most relevant to 20 mph schemes and restrictions governing their implementation is provided in Table 2.

Table 2: Summary of 20 mph Signage Requirements

Sign	Design and Placement Requirements
<p>TSRGD 674 20 mph zone entry signage</p> 	<ul style="list-style-type: none"> Local messaging panel optional Two or more signs placed at, or near, the same point for the same purpose must, if they are terminal signs, be illuminated by the same method May only be placed where any part of the road to which it applies is not less than 50m from a "traffic calming feature" except in a cul-de-sac less than 80m long Traditional traffic calming features were expanded to include <ul style="list-style-type: none"> TSRGD 670 sign TSRGD 1065 road marking roundel At least one physical traffic calming feature must be placed within the zone indicated by the sign When placed as a terminal sign must be placed as "near as practicable" to the point the speed limit changes
<p>TSRGD 675 Exit to 20 mph zone: 675(A) with 30 mph 675(B) with national speed limit</p>  	<ul style="list-style-type: none"> Two or more signs placed at, or near, the same point for the same purpose must, if they are terminal signs, be illuminated by the same method When placed as a terminal sign must be as "near as practicable" to the point the speed limit changes
<p>TSRGD 670</p> 	<ul style="list-style-type: none"> If located on a trunk or principle road, must be illuminated if less than 50m from a lamp column providing illumination for users of that road Two or more signs placed at, or near, the same point for the same purpose must, if they are terminal signs, be illuminated by the same method When placed as a terminal sign must be placed as "near as practicable" to the point the speed limit changes
<p>TSRGD 1065 Speed limit road marking roundel</p>	<ul style="list-style-type: none"> Must be reflectorised If marking the start of a speed limit, must be placed alongside an upright sign (TSRGD 670 or 674)

Source: TSRGD (2016)

It can be seen that the requirements for 20 mph limits are less than for 20 mph zones. Although changes to TSRGD in 2011 altered the definition of a “traffic calming feature” to include a repeater sign or road lining roundel, it is still necessary for all points of a zone to be within 50m of such a feature. In contrast, 20 mph limits require a minimum of one repeater sign. Where 20 mph zones are retained alongside adjoining 20 mph limits, it is possible to keep any branded zone entry signage where there is a desire to do so; however, end of zone signage should be removed and replaced with a 20 mph limit sign.

It is also necessary to consider broader guidance when determining whether 20 mph restrictions may be appropriate and, if so, the design of any schemes. The DfT’s current guidance on 20 mph speed restrictions is provided within the 01/2013 Circular, Setting Local Speed Limits. This notes the recent application of limits to wider areas and encourages local authorities to consider the introduction of 20 mph restrictions on urban roads. The aim of these has been to reduce the number and severity of road traffic collisions, as well as provide more attractive streets and better conditions for walking and cycling. Specifically, it states 20 mph restrictions can be applied on:

- Residential streets where there is community support and the characteristics of the road are suitable; and
- Major roads where there are significant numbers of journeys on foot and bicycle, the numbers of pedestrians and cyclists could be increased or where these users are an important consideration.

Key requirements in determining the suitability of streets for 20 mph restrictions and the design of schemes are as follows:

- Assess the road character and function;
- Ensure “general compliance” is “achievable without an excessive reliance on enforcement” (p.75);
- Complete “comprehensive and early consultation” (p.87), including with residents, police, emergency services, public transport providers and relevant road user groups;
- Consider the full range of options and wider costs and benefits of each to determine the most appropriate method of introducing 20 mph schemes.

2.2 Local Policy

The 2014 version of the Hertfordshire Speed Management Strategy (SMS) follows the change in national guidance by making it easier to implement 20 mph speed restrictions in the county. This includes:

- Adoption of a less restrictive approach to 20 mph zones and limits, reducing the requirement for physical measures;
- Using the mean recorded speed to assess speed limit changes rather than the 85th percentile (the speed at which 85% vehicles drive or under);
- Reduction in the data required when considering a 20 mph zone.

The SMS outlines a number of criteria to be applied when setting speed limits in Hertfordshire and specifically in relation to 20 mph limits and zones.

The general criteria are as follows:

- C1: Assess environment using the Hertfordshire Speed Limit Framework;
- C2: Mean and 85th percentile speeds to be collected before and after a change in the speed limit. Mean speed is to be used to set speed limits, although this will be reconsidered where there is not a consistent relationship between this and the 85th percentile;
- C4: Speed data should be collected on the fastest section of road in free-flowing conditions;
- C5: The Hertfordshire Speed Limits and Zones Implementation process should be followed and a Speed Limit Change Form completed.

The criteria specific to 20 mph zones and limits are as follows:

- C6: All roads should be visited. Mean speed data should be collected in all roads where there is a concern that vehicle speeds are high and in a random 25% sample of all other roads where the new speed limit is proposed;
- C7: An assessment of the environment should be undertaken for each road;
- C8: 20 mph limits without physical measures will only be considered where mean speeds are 25 mph or below;
- C9: 20 mph zones without physical measures will only be considered where at least 90% of the total roads have a mean speed of less than 25 mph and no more than 10% have existing speeds of between 25 mph and 27 mph;
- C10: Speeds will be resurveyed within one year of implementation and there will be a maximum mean speed of 24 mph except the up to 10% of streets previously measured in the range 25 mph to 27 mph. Criterion C10 also states that 20 mph limits and zones must be self-enforcing;
- C11: 20 mph limits and zones will not generally be considered on the A and B road network;
- C12: If physical measures are considered necessary on a bus route, these should comply with HCC's bus infrastructure design guidance.

Policies C13 and C14 cover advisory and variable speed limits respectively. However, these measures are beyond the scope of the current study which is considering the feasibility of introducing additional permanent restrictions in the town.

Broader transport policies for Hertfordshire are provided by the Local Transport Plan (LTP) with the SMS and Road Safety Strategies being related to this. At the time of writing, the consultation process for an updated LTP is ongoing with LTP4 due to be adopted in Spring 2018. In relation to speed management and 20 mph, the draft LTP states that the SMS will continue to be maintained; however, it also notes, in respect of active travel, that "the county council will keep under review the role 20 mph limits can play in this, given these are being used elsewhere in the country to improve road safety and encourage more cycling" (p.62-63).

3 Methodology

This chapter outlines the methodology that has been applied within the study. It begins with details of a benchmarking exercise undertaken with local authorities who have introduced area-wide 20 mph schemes in recent years. The second section details the assessment process applied for the study.

3.1 Case Studies

The study draws on literature and evaluation covering a number of 20 mph schemes introduced elsewhere in the UK in recent years. This has been supplemented through detailed conversations with three highway authorities who have implemented area-wide limits in recent years:

- Brighton & Hove City Council;
- London Borough of Croydon;
- London Borough of Islington.

The experiences and lessons learned have been summarised and used to inform the recommendations made for Watford.

3.2 Assessment of Suitability for 20 mph

As outlined in Chapter 2, Circular 01/2013 sets out the DfT's current position on the setting of speed limits and the 2014 SMS provides HCC's policy on setting speed limits. The following section outlines how the criteria within each have been applied within the current study.

Whilst a selection of roads have been visited as part of the study, for the majority of streets a high-level desk-top assessment has been undertaken using available data. Were the decision to be taken to introduce further 20 mph limits or zones, some additional data collection and site visits would be required in order for the assessment to be fully compliant with the SMS.

3.2.1 Compatibility with National Guidance

Table 3 summarises the main considerations outlined in DfT guidance and how these have been assessed within the current study.

Table 3: Application of National Guidance

Considerations		Application Within Study
General Factors to Consider	History of collisions	Total numbers of collisions and their severity have been identified for each street within the Watford Borough Council area. This has been sourced from www.crashmap.co.uk which provides details of all notified collisions. The analysis has been presented as follows: <ul style="list-style-type: none"> For roads where the speed limit was not 20 mph in 2016, the five most recent years have been included with the average collision rate per year shown; For roads which were 20 mph in 2015 or before, the average for the five years preceding implementation has been presented alongside that for the available years post-implementation.
	Road geometry and engineering	Street character categorisation applied to each street based on HCC Change of Speed Limit form.
	Road function	Street character categorisation applied to each street based on HCC Change of Speed Limit form.
	Composition of road users including existing and potential levels	Data has not been collected on the number of vulnerable road users; however, this has been inferred based on street type.
	Existing traffic speeds	Existing traffic data has been utilised where available and recommendations for future data collection to ensure compliance with local policy are provided.
	Road environment	Street character categorisation applied to each street based on HCC Change of Speed Limit Form.
Specific Considerations for 20 mph	20 mph suitable for residential roads or major roads where there is, or could be, a high proportion of vulnerable road users	Street character categorisation applied to each street.
	Compliance achievable without excessive reliance on enforcement	Assessed based on existing traffic data where available and street character.

Source: DfT Circular 01/2013: Setting Local Speed Limits

3.2.2 Compatibility with Local Strategy

An initial assessment has been undertaken using available data to consider whether HCC's SMS would permit 20 mph speed restrictions to be introduced on roads where this is not currently the case and there are no immediate plans to introduce these. All streets where HCC has or plans to introduce 20 mph speed limits within the 2017-18 financial year have been included as current schemes.

Table 4 summarises how each element of the policy has been addressed within this study. It can be seen that not all are applied in their entirety at this stage owing to the availability of data.

Table 4: Application of Hertfordshire County Council Setting Speed Limits Criteria

Policy Criteria		Application Within Study
General Criteria	C1: Assess environment to confirm appropriateness of speed limit using Hertfordshire Speed Limit Framework	See C7.
	C3: Collect before and after mean and 85 th percentile speed data	See C6.
	C4: Existing speed data should be measured on the fastest section of road in free-flowing conditions	Existing data has been used where available. For future data collection, designers will need to take account of this requirement as it is HCC policy. However, it is also

Policy Criteria	Application Within Study
C5: Follow Hertfordshire Speed Limit and Zones Implementation Process	recommended that the representativeness of locations be considered.
C6: Data collection- all roads shall be visited with mean speed data collected where there is a concern that vehicle speeds are high and a random 25% sample of other roads with locations agreed with Hertfordshire Constabulary Traffic Management Officer	The implementation process goes beyond the initial consideration of the suitability of a change of speed limit including covering the funding, public consultation and decision making processes; however, the initial stages of the Implementation Process are applied within the current study.
C7: Assess environment to confirm appropriateness of speed limit using Hertfordshire Speed Limit Framework	An initial assessment is made for streets where HCC has existing data available. The study recommendations include considerations for future data collection.
C8: Consideration of 20 mph speed limits without physical measures only where mean speeds are less than 25 mph	For 20 mph limits or zones, the Framework states that these may be appropriate where the presence of vulnerable users is high. It also states that they should not generally be implemented on strategic or main roads except under certain conditions, for example urban roads with high numbers of vulnerable users.
C9: Consideration of 20 mph zones without physical measures only where at least 90% of roads have mean speeds under 25 mph and no more than 10% in 25 mph – 27 mph range	Available existing traffic data on pedestrians and cyclists is limited. Therefore, it has been assumed that vulnerable users will (or could potentially) have a high presence on all residential or town centre roads. Strategic roads where a 20 mph restriction is considered appropriate in other respects will be highlighted for further data collection.
C10: Speeds surveyed one year after implementation will have a maximum mean speed of 24 mph	Initial recommendations made based on available data and environmental assessment. Where further data collection is required to allow full assessment in compliance with the Setting Speed Limits criteria, this is identified.
C11: 20 mph limits and zones will not generally be considered on the A and B road network	Where post-implementation data is available for streets with existing 20 mph speed limits, compliance has been considered as part of the study.
C12: Where physical measures are considered necessary on bus routes, the length of these should be kept to a minimum	The potential for 20 mph limits on the strategic road network will be considered against the other criteria outlined.
C13: Advisory 20 mph limits will only be considered outside schools where existing mean speeds are 30 mph or less	The study will identify roads where 20 mph limits and physical measures are recommended on bus routes in order to inform future detailed design of any schemes.
C14: Variable 20 mph limits need to be self-enforcing and have a maximum mean speed of 24 mph during the times of operation	Not considered in this study which focuses on permanent limits or zones.
C14: Variable 20 mph limits need to be self-enforcing and have a maximum mean speed of 24 mph during the times of operation	Not considered in this study which focuses on permanent limits or zones.

Source: Hertfordshire Speed Management Strategy (2014)

3.2.3 Traffic Data

Traffic data has been provided by HCC with this being requested from the full database of available surveys by Mott MacDonald as follows:

- Data not older than 2012 (five years) to comply with the requirement set out in the SMS;
- Where multiple surveys are available, the latest has been used.

3.2.4 Street Character

The study has also applied a street character and function assessment to assist in informing the assessment of the environment of each street (policy criteria C1/ C7) and identify where additional traffic calming measures may need to be considered for future schemes to be self-enforcing. The categories applied are consistent with those outlined within the HCC Change of Speed Limit assessment form (Appendix 7 of the SMS) with the definitions used here being as follows:

- LA1- route through an estate or larger residential area, linking residential areas with secondary distributors;
- LA2- cul-de-sac or residential road serving other minor estate roads only;
- Secondary distributor- local traffic routes connecting different parts of the town, B and C classified roads;
- Main distributor- routes linking the town centre to the strategic network and typically with less frontage access;
- Primary distributor- faster moving route linking neighbouring urban areas.

The above is consistent with the Institute of Highways and Transportation's (IHT) (2003) (now CIHT) Urban Safety Management Guidelines as referenced in the DfT's Circular 01/2013.

Much of the available data is for streets where 20 mph schemes have recently been implemented or where these are already under consideration by HCC. As such, for the current study it has been necessary to make assumptions about current speeds on the majority of streets. In order to comply with national guidance, the threshold above which further consideration is warranted has been set at a mean speed of 24 mph. It is noted that HCC's SMS allows a slightly higher threshold of 25 mph for baseline assessment with 24 mph being the maximum post-implementation speed acceptable. In estimating current speeds, the following has been considered:

- Recorded speed on roads with similar characteristics;
- Presence of existing physical traffic calming such as speed humps;
- Road geometry, including bends and road width (wider, straighter roads are likely to experience greater mean speeds, with the uninterrupted length between bends and other features also a factor);
- Extent of on-carriageway parking which in many residential streets prevents continuous two-way traffic or reduces the effective width; therefore, providing a traffic calming function;
- Where recorded speeds are available, a weekday average between 10:00 and 16:00 has been taken in order to comply with the SMS requirement for speeds to be measured in free flow conditions, ignoring peak periods.

Prior to commissioning the surveys that would be required by the SMS, further discussion on the above, consideration of local knowledge and additional site visits where necessary would be recommended.

4 Existing Situation



This chapter provides an overview of the current speed limits in Watford, including the features of existing 20 mph schemes and existing evaluation of these.

4.1 Existing 20 mph Schemes

The approach to date has been to apply 20 mph speeds in zones, predominantly in residential streets and in the vicinity of schools, although some 20 mph limits have been introduced for certain streets. In all cases, the areas covered have typically been small incorporating neighbouring streets only with many having been funded by the locality budgets of HCC Members representing Watford's six County Council Electoral Divisions.

Table 5 provides a summary of the current 20 mph areas and the date of implementation where known (organised north to south). It also summarises the main features of the individual schemes, including the extent of traffic calming and any local zone branding. As noted previously, the study has not at this stage included a site visit to every street. Therefore, any single-road 20 mph limits not included in the below should be incorporated were schemes to progress to design stage.

Table 5: Existing 20 mph Schemes

Scheme Area	Year Implemented ²	Characteristics	
Leavesden	Not available (9+years)	Traffic calming- speed cushions, raised junctions, chicanes Entry treatment- red surfacing with roundels Branding- none	
Cow Lane	2015	Traffic calming- roundels only Branding- none	

² Installation date estimated based on desktop research where actual date is unavailable

Scheme Area	Year Implemented ²	Characteristics	
Tudor Avenue area	Not available (9+ years)	Traffic calming- speed humps Entry treatment- red surfacing with roundels, width restriction Branding- none	
Greenbank Road area	2017	Traffic calming- roundels only	
Leaford Crescent	2017	Traffic calming- roundels only	
Nascot Wood Road area	2017	Traffic calming- limited speed hump measures on main through route (Nascot Wood Road)	
Sandringham Road area	2017	Traffic calming- roundels only	
Knutsford Avenue area	2016	Traffic calming- existing raised junctions	
Bradshaw Road area	2017	Traffic calming- roundels only Entry treatment- none Branding- none	

Scheme Area	Year Implemented ²	Characteristics	
North Watford: West of St Albans Road	2015	Individually signed 20 mph limits rather than zone Traffic calming- none but scheme included kerb build-outs and crossing improvements Entry treatment- none Branding- Not applicable as limit	
North Watford: West of Leavesden Road	2015	Traffic calming- roundels only Entry treatment- none Branding- none	
North of Langley Road	2017	Traffic calming- roundels only Entry treatment- raised table at Park Road/ Stratford Road	
Alexandra Road area	2016	Traffic calming- roundels only Entry treatment- none Branding- none	
Watford Junction area	Introduced in phases 1999-2005 alongside traffic calming and wider highway improvements. Extension north in 2015	Traffic calming- roundels only in newer section. Older phases included traffic calming Entry treatment- none (new section) Branding- Central Watford Green Zone	
Watford Town Centre	2013	Traffic calming- roundels only Entry treatment- none Branding- Watford Town Centre	

Scheme Area	Year Implemented ²	Characteristics	
Ladys Close	Not available (6+ years)	Single road, school scheme Traffic calming- speed humps Entry treatment- raised crossing Branding- location/ school specific	
West Watford	c.2001, Park Avenue added 2012	Traffic calming- raised junctions, humps Entry treatment- varies, some raised crossings, red surfacing Branding- child's road safety message (faded)	
Metropolitan Station Approach	Not available (6+ years)	Traffic calming- roundels, speed humps Entry treatment- roundels, surface treatment Branding- none	
Sydney Road	Not available (9+ years)	Traffic calming- speed humps Entry treatment- none Branding- child's road safety message	
Watford Fields	2015	Traffic calming- speed humps on main route, others roundels only Entry treatment- roundels, red surface treatment Branding- none	
Vicarage Road	Not available (5+)	Traffic calming- speed bumps Entry treatment- red surfacing, coloured roundels Branding- school specific	

Scheme Area	Year Implemented ²	Characteristics	
Croxley View	Not available (9+)	School-based scheme Traffic calming- speed cushions Entry treatment- dragons teeth Branding- none	
The Rookery	Not available (9+)	Traffic calming- roundels Entry treatment- raised crossings, road humps, raised crossings Branding- nature-based images	
Oxhey	c.2003	Traffic calming- speed humps Entry treatment- raised crossings Branding- Oxhey Village	
Watford Heath	2016	Traffic calming- roundels and signage only, though some existing features serve to slow traffic Branding- Watford Heath	

In addition to the above, HCC consulted on a scheme for the Kingswood area of Garston in autumn 2017. This proposes a zone with no physical traffic calming measures. As can be seen from the table, this is in keeping with more recent 20 mph schemes implemented in Watford and is consistent with national guidance which, as outlined in Chapter 2, requires fewer physical measures than were implemented for the older 20 mph schemes in the town.

4.2 Cost of Previous 20 mph Schemes

As shown in Table 5, the characteristics of existing 20 mph schemes in Watford vary substantially. In addition, some projects featured the implementation of road safety and pedestrian facility measures that were complementary, but not necessarily essential to the delivery of the 20 mph scheme itself. Therefore, care needs to be taken in comparing the cost of both existing schemes in Watford and those delivered elsewhere.

HCC have provided scheme costs for selected previous schemes but have stated that these are unavailable for the majority. Nevertheless, Table 6 summarises the total cost of some of the

above schemes where information is available. It can be seen that the inclusion of traffic calming has a significant bearing on the cost of implementing 20 mph schemes on a per km basis.

Table 6: Cost of Existing 20 mph Schemes in Watford

Scheme	Year	Features (in addition to signage and markings)	Approximate Cost	Approximate Cost per Km (at implementation year prices)
Nascott Wood Road	2017	Existing chicanes removed and three raised tables added	£147,000 (provisional)	£13,500 (provisional)
North of Langley Road		One raised junction		
Bradshaw Road		None		
Sandringham Road		None		
Greenbank Road		None		
West of Leavesden Road	2016	None	£20,000	£17,500
St Albans Road West	2015	Included footway buildouts and crossing improvements	£93,000	£64,500
Cow Lane	2015	Included pedestrian crossing and parking/ loading restrictions	£17,000	£24,500
Clarendon Road	2015	Includes additional new road markings, signage and cyclist advance stop lines	£85,000	£55,000
Park Avenue	2012	Includes three road humps and street lighting upgrades	£40,000	£141,500
Sydney Road	2009	Included five speed humps	£90,000	£200,000
Central Watford Green Zone	1999-2005	Scheme incorporated traffic calming but also a number of wider improvements including pedestrian crossings, lighting, bus stops and cycle facilities	£2,530,000	Not calculated owing to scheme scope
Total			£3,022,000 excluding Green Zone = £492,000	

Source: Hertfordshire County Council

In comparison, research by 20's Plenty has cited a £1,100 per km figure for signed-only 20 mph schemes and £60,000 for schemes that have physical traffic calming³; however, as stated above, care needs to be taken when comparing costs from different authorities and without full detail of what is included in totals that may be available. Further consideration of costs incurred by other authorities is provided in Section 5.2.

4.3 Evaluation of Existing 20 mph Schemes

HCC have provided before and after studies for a number of existing 20 mph schemes in Watford, the results of which are summarised in Table 7. It should be noted that the results for some studies are provisional and compliance will be subject to various factors such as the width

³ http://www.20splentyforuk.org.uk/BriefingSheets/20mphLimits_7_times_more_cost_effective_than_20mph_zones.pdf

and curvature of a road and on-street parking, as opposed to physical traffic calming alone. However, the initial results indicate that a reduction in speed was recorded for the majority of schemes with the level of reduction being greater where traffic calming was introduced. This is consistent with monitoring elsewhere, as considered further in the following chapter.

Table 7: Current 20 mph Scheme Before and After Speeds

Scheme	20 mph Design	Before and After Data	Speed Change (average where multiple streets)	
			85 th Percentile	Mean
West of Leavesden Road	Signage and lines only	2013 and 2016*	Before: 23.0 mph After: 22.5 mph Change: -0.5 mph	Before: 18.0 mph After: 17.9 mph Change: 0 mph
Cow Lane	Signage and lines only	2011 and 2015	Before: 24.4 mph After: 24.1 mph Change -0.3 mph	Before: 19.4 mph After: 18.8 mph Change: -0.6 mph
St Albans Road West	20 mph limit only	2011 and 2015*	Before: 27.7 mph After: 27.4 mph Change: -0.3 mph	Before: 21.8 mph After: 21.3 mph Change: -0.5 mph
Park Avenue	Included speed humps	2008 and 2013	Before: 28 mph After: 21 mph Change: 7 mph	Before: 23.5 mph After: 17 mph Change: -6.5 mph
Sydney Road	Included speed humps	2009 and 2011	Before: 27.5 mph After: 21.9 mph Change: -5.6 mph	Before: 20.7 mph After: 17.1 mph Change: 3.6 mph
Central Watford	Included a range of traffic calming and environmental enhancements	1999	Before: 26.2 mph After: 20.7 mph Change: -5.5 mph	Not provided

Source: Hertfordshire County Council 'Before and After' studies for each scheme (includes available studies only)

*Provisional data

5 Experience Elsewhere

This chapter provides an overview of recent trends in the delivery of 20 mph schemes in the UK, focusing on towns and cities which have implemented area-wide limits. Three case studies are introduced and lessons which could be learnt for the delivery of any future schemes in Watford are identified.

5.1 Evaluation of Area-Wide Limits

Following the changes to national guidance that reversed previous advice against installing signed-only 20 mph limits over larger numbers of roads (see Chapter 2), a number of such area-wide limits have been introduced across the country. As introduced in Chapter 1, this differs from HCC's SMS which uses the term 'limit' to apply to a single street. As with the recent schemes introduced in Watford, zones can also be introduced with limited physical traffic calming; however, the national minimum requirements for repeater signage remain greater than for limits.

Portsmouth City Council was the first authority to introduce an area-wide signed-only 20 mph limit. This is used as a case study in the DfT's Setting Local Speed Limits guidance (Circular 01/2013) which stated:

- Research into signed-only 20 mph limits shows a generally small reduction in traffic speeds and 1 mph on average;
- In Portsmouth, reductions on streets with a previous mean speed of 25 mph or higher tended to be greater but this did not typically make them compliant with the 20 mph limit;
- Area-wide schemes may contribute to changing travel and driving behaviour in the long term with the aims in Portsmouth being much more extensive than improving road safety.

The guidance subsequently stated that such schemes should be considered where mean speeds at 24 mph or below already occur across multiple streets. A large number of authorities have since introduced area-wide limits with the campaign group 20's Plenty for Us identifying at least 60 such schemes nationwide⁴. The majority of these cover densely populated and relatively congested areas where speeds would typically be closer to 20 mph at the outset. However, many city schemes extend to suburban areas with comparable characteristics to Watford.

The DfT commissioned research⁵ into the success of signed-only 20 mph limits in 2014. Although interim findings were addressed in the development of this feasibility study⁶, the full research study was released at its conclusion in November 2018 and have been considered within this final version. This looked at twelve case study areas including a mixture of residential, predominantly residential and city centre schemes. Its main findings include:

⁴ http://www.20splenty.org/20mph_places

⁵ 20 mph Research Study. (Atkins, AECOM and Professor Mike Maher, 2018) <https://www.gov.uk/government/publications/20-mph-speed-limits-on-roads>

⁶ Atkins, AECOM and Professor Mike Maher 20mph Research. Interim findings presented to RSGB Analysts Conference (2017) available from <http://www.pacts.org.uk/wp-content/uploads/sites/2/20mph-Research-GPS-Analysis-RSGB-Analysts-Conf-Febv1.pdf>

- Public support:
 - There is positive post-implementation support for schemes among residents (75%) with this increasing from before scheme implementation; however, there are concerns with the level of enforcement.
- Driver behaviour:
 - 47% of drivers were found to comply with the 20 mph limit in residential areas, 65% in city centre areas and 51% overall;
 - Fewer driver are travelling at over 24 mph with the faster drivers appearing to have slowed;
 - Average 0.7 mph reduction in mean speed in residential areas and 0.9 mph reduction in city centre areas, with greater reductions in the 85th percentile speed of 1.1 mph and 1.6 mph respectively, again meaning faster drivers have reduced their speeds more;
 - Where speeds were highest before, the level of reduction in speeds was greatest. This was found to be 1.3 mph on residential roads with a mean speed over 24 mph and 1.1 mph on busier local roads;
 - In contrast on minor roads where average speeds were already below 20 mph, the average reduction is 0.1 mph.
- Collision rates:
 - There is limited evidence for a reduction in collisions; however, this is based on relatively small data sets over short periods. As collision rates typically fluctuate, the study identifies the need for further longer-term evaluation;
 - The Brighton city centre scheme, also used as a case study within this feasibility study, was however found to have had statistically significant reductions in collisions (18%) and casualties (19%). The research study attributes this to implementation across all roads in the city centre, including A and B roads with the greatest reductions being achieved on the strategic road network.

The study concludes that Highway Authorities should work with other partners including in the police, health departments, environmental specialists and local communities to deliver 20 mph limits. It also suggests that a more consistent approach to 20 mph may be desirable in achieving compliance and contributing to a cultural change in behaviour. Finally, it recommends a greater emphasis on enforcement, including utilising community-led schemes where widespread enforcement by the police is not possible.

Prior to the above, one of the most comprehensive evaluation programmes for an area-wide 20 mph limit was commissioned in Bristol. The council introduced a signed-only 20 mph limit across the city between 2010 and 2015 and the results of the study were released in early 2018⁷. Its main finding included:

- An average speed reduction of 2.7 mph, a higher level than the above figures reported elsewhere;
- 96% of surveyed roads experienced a reduction in speeds which was highest on the classified road network;
- Reductions in the number of injuries resulting from traffic collisions, estimating this as 4.5 fatal, 11 serious and 159 slight injuries annually.

⁷ The Bristol Twenty Miles Per Hour Limit Evaluation (BRITE) Study (Pilkington et al., 2018)
<http://eprints.uwe.ac.uk/34851/1/BRITE%20Bristol%2020mph%20limit%20evaluation%20report%20final.pdf>

The study also identified increased rates of walking and cycling and that these were higher in areas where speeds were lower; however, other factors are likely to have contributed to this change and the authors state that it is not possible to attribute this directly to the 20 mph programme.

The Royal Society for the Prevention of Accidents (ROSPA)⁸ supports both the introduction of zones and limits. It notes that research has shown that zones combined with physical traffic calming have a significant impact on speed reduction and are more proven than signed-only limits which have typically shown a smaller reduction. However, ROSPA also highlight the benefit of signed-only schemes in that their substantially lower cost allows a far higher number of streets to be included within 20 mph areas. DfT Circular 01/2013 (p.82) also cites research that any 1 mph reduction in average speeds in urban areas can reduce collision frequency by up to 6% and furthermore that the severity of these is likely to reduce.

Research has also suggested that where more roads with currently higher speeds are included, greater benefits could be seen as these are typically the roads where more, and higher severity, collisions typically occur. This includes initial findings from the DfT's evaluation which has found greater speed reductions on roads where these were higher to begin with. In Bristol, the value of the collisions estimated to have been avoided was calculated at £15.3m from 175 injuries⁹. Of these, the 16 fatal or serious injuries account for 75% of this cost.

5.2 Scheme Costs

As noted in Chapter 4, analysis of available costs for previous schemes in Watford indicates that the cost of introducing schemes per km reduces substantially for signed-only schemes. Other authorities, have demonstrated cost efficiencies as a result of delivering schemes over larger areas. This includes Leeds¹⁰, which has estimated that a single signed-only scheme covering residential areas without a 20 mph zone would be approximately a third of the equivalent cost of individual zones.

The 20 mph Research Study also provides some additional scheme cost data which suggests¹¹ that there is an average scheme cost of £7,659 per km. This is lower than the Watford schemes for which costs are available, including the signed only schemes (see Chapter 4, Table 6).

5.3 Case Studies

As outlined in Section 3, interviews have been held with officers from three local authorities who have introduced area-wide 20 mph limits in recent years. These are summarised below.

5.3.1 Brighton & Hove

Brighton & Hove's area-wide 20 mph scheme was introduced in three phases between 2013 and 2015 at a cost of approximately £1m. Long term monitoring is ongoing; however, initial results for the first phase covering the city centre showed an average reduction of 1.3 mph with speeds reducing across 74% of streets. The city centre scheme covers the majority of roads, including multiple lane A roads; however, officers have stated that the rationale was only to introduce the limit on such roads where speeds were already at or close to 20 mph. In later

⁸ 20 mph Zones and Speed Limits Factsheet (ROSPA, 2017) <https://www.rospa.com/rospaweb/docs/advice-services/road-safety/drivers/20-mph-zone-factsheet.pdf>

⁹ The Bristol Twenty Miles Per Hour Limit Evaluation (BRITE) Study (Pilkington et al., 2018) <http://eprints.uwe.ac.uk/34851/1/BRITE%20Bristol%2020mph%20limit%20evaluation%20report%20final.pdf>

¹⁰ Leeds City Council (2018) <https://democracy.leeds.gov.uk/ieDecisionDetails.aspx?ID=47413>

¹¹ Mott MacDonald analysis of data contained in Appendix B of 20 mph Research Study. (Atkins, AECOM and Professor Mike Maher, 2018) <https://www.gov.uk/government/publications/20-mph-speed-limits-on-roads>

phases, major roads were not included in the scheme beyond the boundary of the city centre. In addition, public consultation resulted in some residential streets being removed from the proposed 20 mph areas. The latter was only done where groups of streets could be removed and a majority of residents were in favour of this. Individual streets were not removed to avoid multiple changes in the speed limit for drivers travelling along a particular route. The main lessons learnt from Brighton & Hove are as follows:

- It is important to undertake early engagement with key stakeholders, including the police and public transport providers;
- Although there was both strong support and opposition, having speed data for a large proportion of roads was considered essential in being able to respond to the latter and develop a robust case for the scheme;
- It is important to consider the number of changes in speed limit on each route in order to avoid multiple changes. This may affect understanding of the limits and reduce compliance;
- A full character assessment on all streets is important, from which, it should be clear where a signed-only limit is unlikely to be self-enforcing;
- The number of signs purchased for an area-wide scheme is likely to be greater than any other transport project. Therefore, standard contract rates per-sign are unlikely to represent the efficiencies of delivering such a project. A separate tender exercise for the project was therefore advantageous in securing a lower cost for sign production and installation;
- It is necessary to ensure that appropriate human resources are available in the lead up to the launch, particularly around communications;
- It is necessary to consider future maintenance costs and ensure that there is agreement for roundels etc. to be replaced as necessary.

5.3.2 London Borough of Croydon

Croydon Council are introducing a borough-wide 20 mph limit in five phases, costing between £150,000 and £250,000 per phase. The first was introduced in North Croydon in 2016. Based on experience from other areas, including Portsmouth, Croydon Council chose not to introduce 20 mph limits on major roads because of compliance issues and difficulties with enforcement. Excluding the strategic road network also resulted in significant cost savings by removing the need for illuminated signage. Key lessons learnt were identified as follows:

- Consider the placement of entry signage on side roads from the strategic road network in order to minimise costs resulting from the requirement to illuminate signs. In Croydon, signs have been placed sufficiently far back from the junctions with strategic roads to remove this requirement;
- Consider the consultation requirements. The initial phase had a full two-stage consultation; however, for further phases, this has been limited to the formal order process only but with all residents being sent a copy of the consultation notice¹²;
- Engage the local media at an early stage;
- Liaise with neighbouring highway authorities to ensure a sensible approach at borough boundaries;
- The scale of implementing and unveiling sites in one go means that the choice and capability of the contractor is important;

¹² Typically consultation is held in two phases, with an initial consultation followed by a statutory consultation associated with the traffic order. The latter is required to be publicised by notices on-street and in the local press. By combining the two, Croydon Council made sure residents were fully informed at the same time as minimising costs associated with the consultation process.

- The scale of the areas means that design is resource heavy and this should be factored into scheme costs.

5.3.3 London Borough of Islington

Islington Council introduced a 20 mph limit on all residential streets in the borough in 2011. This was subsequently extended in 2013 to all principal roads within the borough's control, leaving only a small number of strategic roads managed by Transport for London (TfL) outside of the 20 mph limit. The extension to principal roads within the borough was agreed despite formal objections from the Metropolitan Police and concerns expressed by TfL on the grounds that the existing speed was above the level quoted in DfT guidance for the introduction of 20 mph limits without traffic calming. Islington Council officers agreed with the technical objections; however, councillors were recommended to approve the scheme on the basis of broad resident support and the intention to reduce speeds. Monitoring indicates that an approximate reduction of 1 mph has been experienced on average across major roads and TfL have subsequently trialled 20 mph limits on parts of the Transport for London Road network (TLRN), including in Islington.

The main lessons in Islington have been identified as follows:

- Work with the police from the outset in order to secure support and an enforcement strategy;
- Determine the need for illuminated signage and long-term strategy at an early stage to avoid unnecessary costs. In Islington, significant amounts of illuminated terminal signage was provided at junctions to major roads on the basis that the latter would not be included in the 20 mph limit. However, within a couple of years the need for the terminal signs was made redundant by the inclusion of major roads within the 20 mph limit. If known from the outset, significant costs could have been saved.

6 Options Analysis

This chapter firstly considers streets in Watford which would potentially be suitable for 20 mph schemes. It then identifies the different options for the delivery of 20 mph and compares the cost and benefits of these.

6.1 Assessment of Suitability for 20 mph

Approximately 380 streets have been identified in Watford with an existing speed limit of 30 mph, including the proposed Garston zone. The study has not considered roads with a speed limit of 40 mph and above as these apply to major routes serving the town, for which a reduction to 20 mph is unlikely to be feasible or appropriate.

Based on the initial street character assessment (see Appendix A), the majority of 30 mph streets (350) are considered suitable in principle for a reduction to 20 mph and would warrant further investigation. A further 19 streets could potentially be included in a 20 mph scheme; however, this would be dependent on the wider design option pursued and consideration would need to be given to likely compliance and enforceability on these routes which are mainly secondary distributor roads. 11 major roads have been identified as less likely to be suited to a 20 mph restriction. Figure 1 overleaf provides an overview by area.

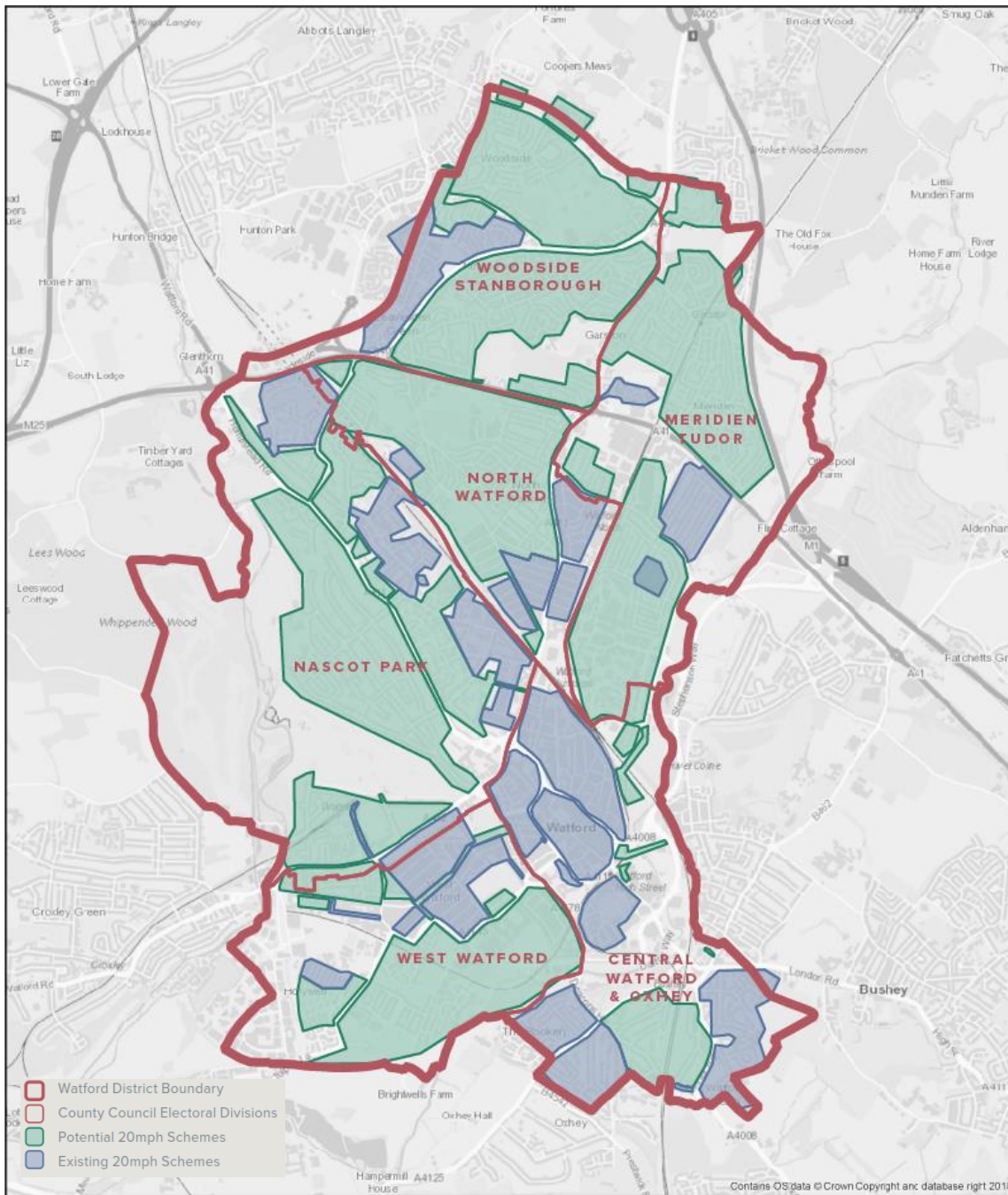
Were all those streets considered suitable in principle to form part of a future 20 mph scheme, criterion C9 of the Hertfordshire SMS would require surveys to be undertaken as follows:

- On all roads where there is a concern vehicle speeds are high. Based on the initial assessment, seven streets for which data are available exceed 25 mph (nine exceed 24 mph) and it is considered that this may be the case for a further 40 streets;
- In addition, speed data would be required for a random 25% sample of streets where no concerns exist that vehicle speeds are high. This would equate to approximately 70 surveys. It is however noted that data exists for 22 streets indicating that speeds are already 24 mph or under. Although this would not produce a truly random sample, it may be prudent to deduct streets with available data from the random sampling element.

It is therefore evident that additional data collection is required in order to allow a full assessment of the suitability of 20 mph limits against HCC guidance. On receipt of this data, criterion C9 then requires examination as follows to determine where physical measures are necessary:

- **No concern about traffic or the mean recorded speed was less than 25 mph:** Road can be included without physical measures;
- **Mean speeds are above 25 mph but below 27 mph:** If more than 10% (based on 350 = 35 streets), some roads will require physical measures and/or the scheme area will need to be reviewed;
- **Mean speeds not below 27 mph:** Physical measures required to reduce traffic speeds on all such roads to be included in scheme.

Figure 1: Potential Suitability for 20 mph- Initial Assessment



The above is based on the initial assessment provided at Appendix A. Full assessment including data collection and site visits would be required to determine the inclusion or removal of roads from any future 20 mph scheme

6.2 Identified Options

The scope of this study is to consider the options for future delivery of 20 mph schemes in the event that these are introduced into further areas in Watford. The main options identified are as follows:

- Option 1a: Continue current approach of small area zones with limited traffic calming;
- Option 1b: Continue to apply small area zones based on the DfT definition with a greater degree of physical traffic calming required;
- Option 2: Town-wide designation of all remaining residential roads;
- Option 3: Borough-wide 20 mph designation;
- 'Do nothing' option: No new 20 mph zones or limits are introduced.

For the purposes of comparing options, Options 1a and 1b assume that zones, as defined by HCC and the DfT respectively, will be implemented in all remaining residential areas of Watford. Option 1a includes limited traffic calming except where this is required, which as defined by the SMS is where speeds are known to exceed 27 mph or there are an unacceptable number of streets within the range 25 mph to 27 mph. Option 1b includes more extensive traffic calming, including a minimum of one feature per zone. The options are illustrated in Figure 2.

6.3 Comparison of Costs and Benefits

Further design and scheme costing work would be necessary in order to compare each option in quantitative terms. However, it is possible to consider the relative costs and benefits of the different schemes identified, as are considered in the remainder of this chapter.

6.3.1 Overview of Expected Costs and Benefits

The Department for Transport introduced a Speed Limit Appraisal Tool (SLAT) alongside its current guidance on setting speed limits (Circular 01/2013, see Section 2.1). The SLAT was developed as a means of informing the forecasting of the impacts of speed limit changes and therefore any decision to implement them; however, its use is not mandatory and it is not included in the change of speed limit assessment process outlined in HCC's SMS. The DfT has also confirmed to Mott MacDonald that the SLAT software is no longer supported; however, the associated guidance has not been withdrawn.

Whilst the software has not been used here, the SLAT User Guidance (DfT, 2013) does provide an overview of the benefits and costs to consider when developing 20 mph schemes. This includes those benefits which could be assigned a monetary value and those for which this is more difficult. The former is a standard technique in the appraisal of major transport schemes, for example, calculating the cost of an injury resulting from a road traffic collision. However not all impacts can be easily or robustly monetised and would therefore not be reflected in a purely quantitative cost-benefit analysis.

It should also be noted that the SLAT guidance states that a Highway Authority has "the flexibility to appraise a potential scheme if it considers local non-monetised benefits to be more important than a possibly adverse monetised benefit" (p. 9). It also notes that "the deciding factor for many speed limit changes is the level of public demand for a scheme" (p.19).

Table 8 provides a summary of the SLAT approach to different costs and benefits. This covers all speed limit changes and some criteria, such as noise, will be less applicable to 20 mph schemes.

Table 8: Speed Limit Appraisal Tool

Cost/ Benefit	SLAT Consideration
Quantified Changes	
Collisions	The personal injury accidents per link can be analysed by severity and a monetary benefit of collisions that are forecast to be saved can be calculated using national values for collision costs.
Time savings	The value of the impact on time can be calculated using national trip purpose values or local data where available. The SLAT method assumes that whenever a speed limit is reduced, travel time disbenefits will occur. However, in practice, this will be dependent on existing speeds.
Vehicle operating costs	As national data indicates 40 mph to be optimum for fuel consumption, an approach based on the SLAT method would calculate a disbenefit for a reduction in speed below this level. However, it should be noted that other research suggests a more complicated picture ¹³ .
CO ₂ emissions	These can be calculated using national values and linked to the above fuel consumption calculations.
NO _x emissions	
Scheme costs	All costs associated with design, implementation, maintenance and enforcement should be considered. For a preliminary appraisal, the guidance recommends broad estimates based on similar schemes implemented previously although for detailed appraisal, preliminary design would be necessary.
Non-quantified Changes	
Modal shift	The guidance states that there is limited available evidence for the impact of speed limit changes on increasing rates of walking and cycling but emphasises “this is not to say that changing speed limits does not influence walking and cycling activity in some cases” (p.19).
Journey time reliability	SLAT Guidance states that speed limit changes in general are unlikely to impact journey time reliability, except where they cause significant changes in traffic flows. Specifically, in relation to 20 mph schemes, it is stated that there is no evidence of public transport reliability being negatively impacted.
Noise	Research suggests noise exposure has a limited relationship with speed limits.
Effects on vulnerable road users	The guidance notes that there are differential impacts in the likelihood of different groups to be involved in traffic collisions and this could be considered in the appraisal process.
Level of public anxiety	As referred to above, the SLAT guidance allows for the possibility that public demand for a revised speed limit can outweigh any wider cost benefit analysis and that this is the case with many schemes implemented. It does however note that if the change in speed limit cannot be enforced, public concern can increase despite the initial popularity of a scheme in principle.
Visual and environmental impact of signing	This refers to the potentially detrimental impact of additional sign clutter. No further appraisal guidance is offered; however, it is worth noting that although the signage of a scheme needs to be in accordance with the legislation outlined in Section 2, the impact can be mitigated through design and potentially wider decluttering programmes.

Source: Speed Limit Appraisal Tool: User Guidance (Department for Transport, 2013)

A full SLAT assessment for the identified options has not been undertaken at this stage and would require further data inputs as outlined above. However, a preliminary comparison of the differences between the identified delivery options has been provided in Table 9. The main costs and benefits are discussed in turn below.

¹³ Research completed by Imperial College London (2013) (*An evaluation of the estimated impacts on vehicle emissions of a 20mph speed restriction in central London*) suggested that for diesel vehicles, NOX emissions are lower over 20 mph compared to 30 mph. For petrol vehicles, the opposite is true; however, the authors note the greater contribution of diesel vehicles to NOX emissions and therefore the significance of this finding. However, for CO₂ emissions, the research states that there is increased fuel consumption at lower speeds. It concludes that “it would be incorrect to assume a 20mph speed restriction would be detrimental to ambient local air quality, as the effects on vehicle emissions are mixed” (p.7). (Imperial College London, 2013)

Table 9: Comparison of Costs and Benefits

	Do Nothing	Option 1a: Zones (HCC definition)	Option 1b: Zones (DfT definition)	Option 2: Residential Limit	Option 3: Borough- Wide Limit
Benefits	B1: Collision and casualty reductions	✗✗✗	✓✓	✓✓✓	✓✓✓
	B2: Improve conditions for vulnerable road users	✗✗✗	✓✓	✓✓✓	✓✓
	B3: Encourage shift to sustainable modes	✗✗	✓✓	✓✓	✓✓
	B4: Potential improved journey time reliability (as distinct from journey time length)	✗			✓
	B5: Speed of delivery	✗✗✗	✗✗	✓✓✓	✓✓✓
	B6: Vehicle emissions	✗	✗✗	✗	✗
Disbenefits	D1: Implementation cost		✗✗	✗✗	✗
	D2: Impact on bus routes		✗✗	✗✗	✗✗✗
	D3: Impact on general traffic journey times		✗✗	✗✗	✗✗

Key: ✓✓✓ larger benefit, ✓✓ smaller benefit, ✗✗✗ larger disbenefit, ✗✗ smaller disbenefit, ✗ smallest disbenefit

6.3.2 Scheme Cost and Delivery

The pricing information available for existing schemes in Watford (see Chapter 4) does not enable the cost of individual items to be disaggregated but does allow for a general comparison of the variation between 20 mph scheme types. In addition, basic costs for common 20 mph infrastructure would typically be expected to be in the region of:

- Roundel road marking - £150
- Unilluminated sign - £300 dependent on size and requirements for new posts
- Speed cushion - £10,000 per pair, dependent on specification
- Raised crossing - £15,000, dependent on specification and road width
- Raised junction- £30,000, dependent on specification and site requirements

The number of physical traffic calming measures and signage requirements for each option would be subject to scheme design. This would for example determine the need for additional posts, repeater signage and terminal signs on both sides of the road at entry points. However, some additional analysis has been completed which takes account of the signage requirements for zones and limits outlined in Chapter 2. This is summarised in Table 10.

Table 10: Estimated Infrastructure Costs¹

Scheme Element	Indicative Cost (per item)	Estimated Items Per Option			
		Option 1a (HCC Zone)	Option 1b (DfT Zone)	Option 2 (Residential Limit)	Option 3 (Borough-Wide Limit)
Zone sign	£300	220	220	0	0
Zone terminator sign	£300	220	220	0	0
Limit sign ²	£250	0	0	440	160
Illuminated limit sign ³	£1,500	0	0	0	20
Removal of existing zone signage	£200	0	0	150	150
Limit repeater roundel ⁴	£150	860	860	100	150
Physical traffic calming feature ⁵	£10,000	0	26	0	0
Indicative cost		£261,000	£521,000	£155,000	£122,500

¹Costs estimated only. Does not include staff and other implementations costs which are also likely to vary by option and discussed further below.

²TSRGD (2016) means Highway Authorities are no longer required to place limit signs on both sides of an entry point, although there is requirement for signage to be clear. The number of signs quoted here is therefore a conservative estimate and it is possible that this number could be reduced at the detailed design stage.

³ For the residential limit option, it has been assumed that signs can be located away from the major road in order to avoid illumination costs.

⁴ For the limit options, TSRGD (2016) no longer places a requirement on Highway Authorities to place a minimum of one repeater sign in 20 mph limits. Therefore, this would be subject to detailed design and at the discretion of HCC. However, the majority of schemes do include some repeater signage and therefore an allowance has been made for this.

⁵ The physical traffic calming feature requirement applies to zones only, although it may be necessary in other options in order to meet the requirement that they are 'self-enforcing'. The cost of this would be dependent on the type of measure (for example speed cushion, raised crossing or raised junction) to be determined at detailed design. The above costs assume lower-cost speed cushions only.

The most expensive option in terms of cumulative cost is expected to be the introduction of small zones with more extensive traffic calming (Option 1b). This is likely to result in 20 mph speed restrictions being introduced at a slower rate (Table 10, B5), meaning that it could take considerably longer for the benefits to accrue across the town, when compared to the case with Options 2 and 3 for area-wide limits.

HCC's recent approach of introducing signed-only zones (Option 1a) would have fewer disadvantages when compared to an area-wide limit covering residential streets (Option 2); however, it would not benefit from the economies of scale that could arise from purchasing signs and delivering in bulk as well as efficiencies for officer time. Options 2 and 3 would however require greater upfront investment and sufficient resources to manage large scale design, public consultation and communications around the launch of a scheme. These costs are not included in Table 10 which estimates the costs of physical infrastructure only.

The main difference between Option 2 and 3 would be the reduced signage requirements of an area-wide designation as entry signage would not be required as extensively from distributor roads. There is a potential for cost savings particularly where it is necessary to provide illuminated 20 mph limit signs (to TSRGD Dia.670) on principal roads in accordance with the TSRGD requirements (see Chapter 2). Some authorities such as Croydon and Brighton & Hove

have overcome this requirement by placing the limit signs so they are technically sited on the entry road rather than the principal road network. Nevertheless, it remains the case that the entry signage requirements would be greater for a 20 mph limit applying to all residential roads compared to an all-roads designation. However, if including major roads, it will be necessary to consider the need for additional repeater signs and/or physical traffic calming. This means the associated infrastructure costs for Option 3 could be greater than indicated in Table 10 as this is based on the minimum physical measures that would be required by TSRGD together with an allowance for optional 20 mph repeater signage. Where limits are introduced, it will also be necessary to consider the interface with existing zones and an allowance is made in Table 10 for the costs associated with the removal of existing signage.

6.3.3 Casualty Reductions

National guidance suggests that the impact on speed reduction is generally greater for zones incorporating traffic calming (Option 1b) than signed-only limits. The impact on streets which already have relatively low speeds is however more limited and, where this is the case, the implementation of schemes without significant traffic calming is likely to be more appropriate. Although data on area-wide limits elsewhere is still emerging, general traffic speed compliance has been found to be an issue. Nevertheless, the small reductions in speed typically recorded have the potential to reduce both the number and severity of collisions which do occur.

Mott MacDonald has undertaken analysis of collision data provided by HCC for the five-year period between 2013 and 2017. This provides details of collisions reported to the police and the causation factors attributed by officers attending. These have been mapped against the alternative scenarios for additional 20 mph restrictions (see Appendix B) which also includes the casualty reduction estimate for each of the options, as summarised in Table 11.

The analysis is based on findings cited in the DfT's Setting Local Speed Limits Circular 01/2013 (see Chapter 5) that the introduction of 20 mph could lead to an average reduction in speeds of 1 mph, which can in turn be expected to lead to a reduction in collisions of approximately 6%. These figures have been used as a guide to any benefits the different 20 mph schemes may have for Watford. However, it should be acknowledged that not all schemes have seen this level of reduction and this will ultimately be down to a range of factors including design.

As noted in Section 5.1, research commissioned by the DfT was released in November 2018 following the completion of the current feasibility study¹⁴. This looked at 12 recent signed-only schemes elsewhere in the country and found the level of speed reduction to be variable by road type and existing speed. The reduction in collisions on residential roads was also found to be low based on a limited period of available data; however, there is some evidence that the introduction of 20 mph on higher speed roads has a greater benefit. The analysis presented here is therefore intended to provide a relative comparison of the impact different 20 mph scheme types could have as opposed to a definitive estimate on the number of casualties that would be saved.

It should also be acknowledged that for the majority of recorded collisions, exceeding the speed limit has not been attributed as a contributory factor:

- For Watford, 50 of the 1,077 collisions recorded between 2013 and 2017 had excessive speed given as a causation factor;

¹⁴ 20 mph Research Study. (Atkins, AECOM and Professor Mike Maher, 2018) <https://www.gov.uk/government/publications/20-mph-speed-limits-on-roads>

- Where speed is given as a cause, this is often associated with reckless behaviour and where drivers are using excessive speed;
- Some of the excessive speed collisions may be less likely to occur if the speed limit was reduced. However, if the speed limit was reduced to 20 mph, this may not necessarily reduce the occurrence of these collisions.

Nevertheless, speed may be expected to exacerbate or make collisions attributed as being a result of other factors more likely. Therefore, the assumed reduction included in DfT Circular 01/2013 has been applied here.

Table 11: Road Traffic Accident Casualty Analysis

	End Outcome					
	20 mph on all residential streets (Options 1a, 1b and 2)			20 mph on most roads within Watford (Option 3)		
Current casualties ¹	Slight	Serious	Fatal	Slight	Serious	Fatal
Average	49.0	5.8	0.0	112.6	15.4	0.2
Current cost of collisions ² (per year)						
	£657,139	£1,008,991	£0	£1,510,079	£2,679,046	£309,621
Potential casualty reduction ³ (per year)						
	2.9	0.3	0.0	6.8	0.9	0.0
Value of collision savings (per year)						
By casualty type	£39,428	£60,539	£0	£90,605	£160,743	£18,577
Total	£99,968			£269,925		

¹ 2013-2017 collision data provided by HCC

² Cost of collisions based on DfT WebTAG Databook June 2018 v.1.10.1 (average value for all user types)

³ Assumed 1 mph and 6% reduction as DfT Circular 01/2013

The analysis presented would suggest that the value of collision savings could be between £100,000 and £270,000 per annum depending on the option progressed. As the 20 mph Research Study has found, these reductions are more likely where vehicles are travelling at higher speeds and not already at 20 mph or below.

It can be seen that Option 3 would be expected to have the greatest benefit on the basis it would include more roads, and in particular those roads where more collisions (and those of higher severity) have been recorded. This would also be consistent with the 2018 20 mph Research Study¹⁵ that there is the potential for greater collision reductions on streets where speeds are higher to begin with and has been witnessed in the comprehensive evaluation of the Bristol scheme (see Chapter 5). For those options that would introduce a 20 mph restriction on all residential streets, Option 2 would be expected to have a greater benefit than Options 1a and 1b on the basis that this scenario would see 20 mph rolled out at a quicker rate.

For both Options 2 and 3, more consistent speed limits also have the potential to lead to greater awareness and understanding and would reduce current inconsistencies that require those using certain routes to comply with multiple changes in speed limit. It would also reduce anomalies whereby there is an increase in the speed limit when drivers cross a zone boundary despite moving further into a residential area.

¹⁵ 20 mph Research Study. (Atkins, AECOM and Professor Mike Maher, 2018) <https://www.gov.uk/government/publications/20-mph-speed-limits-on-roads>

6.3.4 Improving the Street Environment

Several authorities have cited potential benefits to the street environment when introducing 20 mph limits which may help to encourage more trips on foot and by bicycle (Table 9, B2) as a result of less hostile conditions; however, as referred to above, the DfT's (2013) Speed Limit Appraisal guidance states that there is limited quantifiable evidence at present. Given the stronger evidence for speed reductions in zones with traffic calming, Option 1b has been rated highest in Table 9 were this to be rolled out to all residential streets. However, the limited speed at which this could be delivered owing to cost constraints may mean the relative benefit of the signed-only options increases. The latter are more likely to result in the environmental benefits of slower speeds with the DfT's 01/2013 guidance stating that "generally, driving more slowly at a steady pace will save fuel and reduce pollution, unless an unnecessarily low gear is used" (p.83). There is however potential for this benefit to be reduced where traffic calming requiring vertical deflection (e.g. speed humps) is used extensively. Such impacts are more likely where vertical deflection is required owing to the need for vehicles to decelerate and accelerate more frequently.

6.3.5 Impact on Journey Times

A common objection to area-wide 20 mph limits is the perceived impact on vehicle journey times (Table 9, D3) which are likely to be greater if more major roads are included and the scheme is successful in achieving compliance. For this reason, Option 1a, where zones are implemented with limited traffic calming and do not incorporate major roads, is likely to have least impact. This is also the case for the impact on bus routes (Table 9, D2), either through increased journey times or the need for buses to negotiate physical traffic calming. However, this ignores the potential positive impact of more reliable journey times resulting from smoother traffic flows and a shift towards sustainable modes (Table 9, B3).

6.3.6 Overall Comparison of Costs and Benefits

From the above, it can be seen that all options would be expected to deliver benefits. Evaluation of schemes elsewhere has shown that compliance is likely to be higher where traffic calming is provided. However, limiting traffic calming to roads which have light traffic flows and already experience low speeds reduces the potential benefit in monetised terms, for example as fewer collisions are already occurring. Likewise, implementing a scheme with or without traffic calming in smaller areas over many years (Options 1a and 1b) will reduce the rate at which these benefits are accrued compared to a scheme which is implemented over a wide area at the same time (Options 2 or 3).

In benefit terms, there is therefore an argument for implementing schemes over wider areas. However, this needs to be balanced against the practical considerations of implementing larger schemes and the funding available for these.

6.4 Compatibility with Policy

As outlined in Chapter 2, Circular 01/2013 sets out the DfT's current position on the setting of speed limits while the 2014 SMS provides HCC's policy.

In terms of national policy, an initial assessment has been undertaken of all roads based on their characteristics. As noted above, most streets are considered suitable in principle. However, for a number of these, it is possible that reduced speed limits may not be self-enforcing and therefore compliance may be an issue; as has been seen with some schemes elsewhere. In this respect, Circular 01/2013 (p.96) states that "schemes need to aim for

compliance with the new speed limit"; however, it also states that signing, publicity and information are part of this as well as road conditions.

There is nothing therefore in national policy to prevent the progression of any of the identified options. It is however noted that were the Option 1a approach of 20 mph zones to be progressed, additional physical traffic calming measures would technically be required (if not already present) in order to comply with the TSRGD (2016) requirements for installing the 20 mph zone sign (TSRGD 674). HCC have addressed this discrepancy within the definitions adopted by the SMS and the principle of applying 20 mph over a small area without physical traffic calming is accepted by the DfT, albeit with limit rather than zone signage.

In order to be compatible with local policy, speed data for additional roads would be required as outlined in Section 6.1. Compliance with the SMS would then be determined by the number of roads in different existing speed categories that are included in a future scheme and the type and number of physical traffic calming measures proposed.

National guidance recommends that signed-only limits are only introduced where existing speeds are at or close to 24 mph. Although the DfT do not specify data collection requirements, the only way to robustly confirm this would be to survey a suitable number of streets. Guidance on using the SLAT appraisal (DfT, 2013; see Section 6.3.1) does however suggest that:

- For area-wide schemes, the collection of data for individual links is likely to be impractical and not cost effective.
- In such circumstances, links could be combined based on their similar characteristics (e.g. parallel residential streets).
- A preliminary appraisal could be conducted by factoring up a short traffic count obtained from a site visit, judgement and local knowledge or, for speeds, a short radar gun survey.
- For a more detailed assessment; accurate traffic and speed data, measured for at least one week is recommended, with traffic counts factored up to Average Annual Daily Traffic figures using an appropriate permanent traffic counter.

Relatively extensive data collection as required by the SMS would be consistent with the approach of other local authorities such as Brighton & Hove and Islington where it was considered necessary for the purpose of providing an evidence base for schemes, as well as allowing for future evaluation. Nevertheless, given the size of the area and data collection requirement, it is considered reasonable to exclude the smallest residential streets, particularly cul-de-sacs, from the random sampling requirement given the very high probability that speeds will already be below 20 mph. This would reduce the number of streets from which a 25% data collection sample is required by the SMS. Such an approach would however need to be agreed with HCC owing to the departure from the assessment method outlined in the strategy.

Notwithstanding the data collection requirements, it is considered that an area-wide 20 mph scheme on residential streets for Watford (Option 2) would in principle be compliant with both national and local policy. The main concern would be the ability for any scheme to be self-enforcing and achieve a good level of compliance. The use of the term 'limit' to describe an area-wide scheme would also be contrary to the Hertfordshire SMS which restricts these to single roads. However, this is considered a matter of terminology as opposed to a fundamental barrier to the introduction of an area-wide limit. Furthermore, the county council's draft LTP4 opens the possibility of area-wide limits (see Chapter 2). Option 3 incorporating some major roads would require further assessment, including that of vulnerable user numbers, in order to assess compliance with the SMS.

7 Funding

This chapter provides an overview of the different options for funding future 20 mph schemes in Watford.

7.1 Hertfordshire County Council

Schemes could potentially be funded through HCC's Local Transport Plan and/or County Council Members' Locality Budgets which have been used to fund previous 20 mph projects in the town. Table 12 provides a summary of each Electoral Division and the number of 30 mph streets deemed potentially suitable for a 20 mph speed limit. As noted in previous sections, the exact number of streets would need to be determined by detailed site assessment and preliminary scheme design.

Table 12: Potential 20 mph Streets by Electoral Division

Electoral Division	Number of Streets	Approximate Length
Central Watford and Oxhey	32	12.7 km
Meriden Tudor	69	27.1 km
Nascot Park	64	23.4 km
North Watford	58	18.8 km
West Watford	42	12.7 km
Woodside Stanborough	86	24.5 km

7.2 Hertfordshire Police and Crime Commissioner

The current feasibility study has been funded by the Hertfordshire Police and Crime Commissioner's Road Safety Fund. Whilst it would be expected that capital funding would need to be obtained from traditional sources for scheme implementation, there may be opportunities to undertake further site assessment and scheme development by using current funding or that derived from future applications.

7.3 Central Government

Some existing UK schemes have been funded by central government grant funding for sustainable transport projects, most notably the Local Sustainable Transport Fund, which ran from 2011 to 2016. Following a bidding process for local authorities during 2016, it was replaced by the Access Fund for Sustainable Travel for funding to 2020. Based on recent history, it would be expected that there would be another programme and associated bidding process when the Access Fund period comes to an end. However, the eligibility of 20 mph schemes would be subject to compatibility with the aims of any future grant funding, as determined by the priorities of Central Government.

It is noted that further funding is devolved from the DfT to Local Enterprise Partnerships (LEPs) with Hertfordshire LEP covering Watford. The availability of funds for 20 mph schemes will be dependent on the aims of the funding which are focused on economic growth; however, a case has been made on economic grounds in other areas including Manchester and Cambridgeshire.

7.4 Developer Contributions

For Watford, a Community Infrastructure Levy (CIL) was introduced by the council in 2015. The council's CIL Regulation 123 List identifies highways and transport improvements to be funded through this. Although Section 106 agreements from individual developments are still possible for transport measures, these must not duplicate the CIL. Similarly, the National Planning Policy Framework (NPPF) requirement for S106 obligations to be directly relevant to a development and necessary to make it acceptable in planning terms is such that this avenue is less likely to be appropriate for 20 mph zones or area wide limits. There may however be scope for securing small contributions to measures forming part of wider 20 mph schemes such as raised junctions or other traffic calming measures where the request meets the tests outlined in the NPPF.

7.5 Other Sources

Support and funding for 20 mph schemes has been provided by public health bodies. For example, in Liverpool, funding was provided by the then Primary Care Trust with recent examples also including Bristol and Calderdale, Yorkshire. For the latter, public health funds covered half of the £1 million scheme covering all residential roads in Halifax and neighbouring towns.

8 Conclusions and Recommendations

This chapter outlines the main study conclusions and recommendations. These do not represent intended design recommendations for streets to be included in any future 20 mph scheme at this stage and instead confirms the feasibility of different delivery options. This would be subject to further investigation, discussion with key stakeholders and public consultation.

8.1 Costs and Benefits

This study has considered the anticipated costs and benefits associated with different options for delivering 20 mph. This indicates:

- Option 1b (zones with some traffic calming) would have greatest capital costs
- Option 3 (area-wide limit) would have lowest capital costs
- Option 1a (zones with limited traffic calming) would be expected to deliver benefits equivalent to the value of capital costs within three years, compared to two years for Option 2 (area-wide residential limit) and one year for Option 3 (borough-wide limit)

It should be recognised that this is based on indicative cost estimates for signs, lines and the minimum traffic calming required by each option to comply with DfT requirements. It is likely schemes will need to include more traffic calming to achieve the desired outcomes. In addition, there will be significant revenue costs for HCC associated with design, consultation, traffic order making, project management, data collection and monitoring which should be considered.

8.2 Achieving Compliance with National and Local Policy

As outlined in Section 6.1, in order to comply with the Hertfordshire SMS, speed data would be required for up 70 streets, although this is already available for around 30. Speed data is necessary in order to assess the need for physical traffic calming measures and/or the adjustment of scheme boundaries so that the areas proposed for 20 mph speed restrictions become compliant. Before undertaking additional data collection, it is recommended that the streets highlighted in Appendix A be reviewed and available data not included within this study be used to minimise this requirement wherever possible. The final list of locations should be agreed with data monitoring officers at HCC and traffic management officers at Hertfordshire police.

8.3 Considerations

In considering the future delivery of 20 mph zones or limits within Watford, the implementation process outlined in the SMS including agreement with Hertfordshire Police and public consultation will need to be applied. However, in terms of potential scheme delivery options, this is likely to be determined by whether the emphasis should be on:

- Higher levels of speed reduction and compliance on a smaller number of streets. If so, Option 1b (zones with traffic calming) would be more likely to deliver these benefits but be constrained by cost in the short-medium term; or
- Allowing a larger number of streets to benefit from likely smaller average gains in the shorter term. If so, Option 2 (area-wide residential limit), or subject to further investigation, Option 3 (borough-wide limit) would be appropriate. If these are taken forward for further

consideration, it would be possible to target physical measures to improve compliance where this is found to be necessary over the longer term.

8.4 Recommended Approach

It is recommended that:

- Consideration be given to the introduction of 20 mph over a larger number of streets during each intervention. It is recommended that this be as a single intervention or the minimum number possible. This will improve consistency between adjacent streets and allow the benefits to accrue at a quicker rate. Comparison of costs for area-wide schemes implemented in towns and cities elsewhere also suggests it is likely to provide some overall efficiency savings, for example, in project management and public consultation costs;
- In relation to the design of schemes, it is recommended that the recent approach of introducing 20 mph schemes with limited traffic calming be continued in Watford, reviewing the need for this on a site-by-site basis. This is supported by evidence elsewhere which indicates that, whilst reductions in speed may not be as great, lower speeds can still generally be expected or, alternatively, the lower limit may assist in reinforcing an existing low-speed environment;
- Consideration be given to the inclusion of some distributor roads in future schemes, especially where there could be significant journeys on foot or by bicycle. Evidence from elsewhere suggests that, whilst compliance will need to be addressed, the level of speed reduction will be greatest on these roads. In addition, as they experience a higher proportion of collisions (including those with higher severity), this may translate into a greater benefit when the costs of injuries are considered in isolation. This may require an amendment to Hertfordshire SMS policy C11; however, is consistent with DfT Guidance (Circular 01/2013);
- It is recommended that HCC consider the relaxation of the 25% sample criteria (SMS Policy C6) so that this excludes some residential roads, particularly estate roads and cul-de-sacs which will generally have low speeds and provides an opportunity to reduce data collection costs. Site assessment and some data collection is still likely to be necessary to inform the design of potential schemes and allow post-implementation evaluation.

Appendices



A. Appendix A: 30 mph streets assessment

Watford 20 mph Feasibility Study

Current 30 mph Streets

The following provides an initial assessment against local and national guidance. However, further site assessment would be required prior to determining whether 20 mph should be introduced on each street.

Street				Current Speed Limit (or scheduled 2017/18)	Traffic Survey Available?	National Speed Limit Considerations						Hertfordshire Speed Limit Considerations										C12: Bus Route	20 mph Suitable in Principle?		
						Collision History (non 20mph) Average per year for 2012-2016				Road User Composition		Vehicle volume categorisation	C6: Before Speed Data					Maximum mean speed greater than 24mph							
						Average number of collisions	Average number of slight severity	Average number resulting in fatalities	Number of seriously injured				24hr Weekday Daily Vehicles (average if multiple days available)	Road classification	Road hierarchy	Roadside development	Presence of vulnerable users high		85th %ile 10am- 4pm	Mean 10am - 4pm	Difference				
Name	Section	HCC Electoral Division																							
Beechen Grove	North	Central Watford & Oxhey	30 mph	None		8	7.8	0	0.2	Not measured but expected high	A	Main Distributor	Mixed	Yes	0	Not measured but likely	Yes								Less likely
Dalton Way		Central Watford & Oxhey	30 mph	None		1.2	1.2	0	0	Not measured but expected high	A	Main Distributor	Limited	No	0	Not measured but likely	Yes								Less likely
Exchange Road		Central Watford & Oxhey	30 mph	None		6.2	5.4	0.2	0.6	Not measured but expected high	A	Main Distributor	Mixed	Yes	0	Not measured but likely	Yes								Less likely
Thomas Sawyer Way		Central Watford & Oxhey	30 mph	None		0	0	0	0	Not measured but expected high	Unclassified	Secondary Distributor	Limited	No	0	Not measured but likely	No								Less likely
Hempstead Road	A411	Nascot Park	30 mph	None		5.4	4.6	0	0.8	Not measured but expected high	A	Main Distributor	Residential	Yes	0	Not measured but likely	Yes								Less likely
Hempstead Road		Nascot Park	30 mph	None		5.4	4.6	0	0.8	Not measured but expected high	A	Main Distributor	Residential	Yes	0	Not measured but likely	Yes								Less likely
Hyde Road		Nascot Park	30 mph	None		0.2	0.2	0	0	Not measured but expected high	A	Main Distributor	Mixed	Yes	0	Not measured but likely	Yes								Less likely
St Albans Road	South	Nascot Park; Central Watford & Oxhey	30 mph	None		4	3.8	0	0.2	Not measured but expected high	A	Main Distributor	Mixed	Yes	0	Not measured but likely	Yes								Less likely
Ashfields	South	North Watford	30 mph	None		0.2	0.2	0	0	Not measured but expected high	C	Secondary Distributor	Limited	No	0	Not measured but likely	Yes								Less likely
St Albans Road	Middle	North Watford	30 mph	None		16.4	14.2	0.2	2	Not measured but expected high	A	Main Distributor	Mixed	Yes	0	Not measured but likely	Yes								Less likely
Ascot Road		West Watford	30 mph	None		0.8	0.8	0	0	Not measured but expected high	Unclassified	Secondary Distributor	Residential	Yes	0	Not measured but likely	Yes								Less likely
Orphanage Road		Central Watford & Oxhey	30 mph	Speed and volume		0.8	0.8	0	0	9645 Medium	Unclassified	Secondary Distributor	Limited	Yes	25	20	5	No							Possibly
Hagden Lane		West Watford	30 mph	Speed and volume		4.2	3.8	0	0.4	9091 High	A	Main Distributor	Residential	Yes	23	19	4	No							Possibly
Vicarage Road	North	West Watford	30 mph	Speed and volume		2.6	2.6	0	0	12400 High	A	Main Distributor	Residential	Yes	26	21	5	No							Possibly
Cassio Road		Central Watford & Oxhey	30 mph	None		2.2	2	0	0.2	Not measured but expected high	A	Main Distributor	Mixed	Yes	0	Not measured but likely	No								Possibly
Chalk Hill		Central Watford & Oxhey	30 mph	None		1.2	1	0	0.2	Not measured but expected high	A	Main Distributor	Residential	Yes	0	Not measured but likely	Yes								Possibly
Deacons Hill		Central Watford & Oxhey	30 mph	None		0.6	0.6	0	0	Not measured but expected high	A	Main Distributor	Limited	Yes	0	Not measured but likely	Yes								Possibly
Eastbury Road		Central Watford & Oxhey	30 mph	None		6.8	5.8	0	1	Not measured but expected high	A	Main Distributor	Limited	Yes	0	Not measured but likely	Yes								Possibly
Lower High Street	North	Central Watford & Oxhey	30 mph	None		3.6	3.4	0.2	0	Not measured but expected high	A	Main Distributor	Mixed	Yes	0	Not measured but likely	Yes								Possibly
Merton Road		Central Watford & Oxhey	30 mph	None		0.6	0.4	0	0.2	Not measured but expected high	A	Main Distributor	Mixed	Yes	0	Not measured but likely	No								Possibly
Pinner Road		Central Watford & Oxhey	30 mph	None		2.2	1.4	0	0.8	Not measured but expected high	A	Main Distributor	Residential	Yes	0	Not measured but likely	Yes								Possibly
Wiggenhall Road		Central Watford & Oxhey	30 mph	None		1.6	1.6	0	0	Not measured but expected high	A	Main Distributor	Limited	No	0	Not measured but likely	No								Possibly
Radlett Road	North	Meriden Tudor	30 mph	None		1.6	1.6	0	0	Not measured but expected medium	C	Secondary Distributor	Limited	Yes	0	Not measured but likely	Yes								Possibly
Rickmansworth Road		Nascot Park	30 mph	None		8	6.4	0	1.6	Not measured but expected high	A	Main Distributor	Mixed	Yes	0	Not measured but likely	Yes								Possibly
Farraline Road		West Watford	30 mph	None		0.2	0.2	0	0	Not measured but expected high	A	Main Distributor	Residential	Yes	0	Not measured but likely	Yes								Possibly
The Hornets		West Watford	30 mph	None		0	0	0	0	Not measured but expected high	A	Main Distributor	Residential	Yes	0	Not measured but likely	Yes								Possibly
Whippendell Road		West Watford	30 mph	None		5.4	4.8	0	0.6	Not measured but expected medium	C	Secondary Distributor	Residential	Yes	0	Not measured but likely	Yes								Possibly
Horseshoe Lane		Woodside Stanborough	30 mph	None		3.6	3.2	0	0.4	Not measured but expected high	Unclassified	Secondary Distributor	Mixed	Yes	0	Not measured but likely	Yes								Possibly
St Albans Road	North	Meriden Tudor	30 mph	Speed and volume		4	3.4	0	0.6	13756 High	A	Main Distributor	Mixed	Yes	33	28	5	Yes							Possibly
Tolpits Lane	East	West Watford	30 mph	Speed and volume		2.2	2.2	0	0	14887 High	A	Main Distributor	Residential	Yes	31	25	6	Yes							Possibly
Water Lane	East	Central Watford & Oxhey	30 mph	Speed and volume		0.6	0.6	0	0	7761 High	Unclassified	Secondary Distributor	Mixed	Yes	23	18	5	No							Yes
Water Lane	West	Central Watford & Oxhey	30 mph	Speed and volume		0	0	0	0	3677 Medium	Unclassified	Local Access 2	Mixed	Yes	19	15	4	No							Yes
Fourth Avenue		Meriden Tudor	30 mph	Speed and volume		0	0	0	0	2049 Medium	Unclassified	Local Access 2	Residential	Yes	28	24	4	No							Yes
Cassio Road		Nascot Park	30 mph	Speed and volume		0.2	0.2	0	0	416 Low	Unclassified	Local Access 1	Residential	Yes	28	22	6	No							Yes
Cassio Road		Nascot Park	30 mph	Speed and volume		0.2	0	0	0.2	2661 Medium	Unclassified	Local Access 1	Residential	Yes	25	20	5	No							Yes
Maythorne Close		Nascot Park	30 mph	Speed and volume		0	0	0	0	182 Low	Unclassified	Local Access 2	Residential	Yes	22	17	5	No							Yes
Orchard Drive		Nascot Park	30 mph	Speed and volume		0	0	0	0	343 Low	Unclassified	Local Access 2	Residential	Yes	27	23	4	No							Yes
Queen Mary's Avenue		Nascot Park	30 mph	Speed and volume		0	0	0	0	736 Low	Unclassified	Local Access 2	Residential	Yes	21	17	4	No							Yes
The Chase		Nascot Park	30 mph	Speed and volume		0	0	0	0	162 Low	Unclassified	Local Access 2	Residential	Yes	20	15	5	No							Yes
Fuller Road		North Watford	30 mph	Speed and volume		0.6	0.6	0	0	669 Low	Unclassified	Local Access 1	Residential	Yes	24	19	5	No							Yes
Hazel Tree Road		North Watford	30 mph	Speed and volume		0	0	0	0	1667 Medium	Unclassified	Local Access 1	Residential	Yes	26	21	5	No							Yes
Longspring		North Watford	30 mph	Speed and volume		1.2	1.2	0	0	4986 High	Unclassified	Local Access 2	Residential	Yes	23	19	4	No							Yes
Euston Avenue		West Watford	30 mph	Speed and volume		0	0	0	0	494 Low	Unclassified	Local Access 1	Residential	Yes	21	18	3	No							Yes
Queens Avenue		West Watford	30 mph	Speed and volume		0.6	0.6	0	0	5826 Medium	C	Secondary Distributor	Residential	Yes	24	20	4	No							Yes
Appletree Walk		Woodside Stanborough	30 mph	Speed and volume		0	0	0	0	962 Medium	Unclassified	Local Access 2	Residential	Yes	28	21	7	No							Yes
Briar Road		Woodside Stanborough	30 mph	Speed and volume		0	0	0	0	831 Medium	Unclassified	Local Access 1	Residential	Yes	31	24	7	No							Yes
Clarke Way		Woodside Stanborough	30 mph	Speed and volume		0.2	0.2	0	0	607 Low	Unclassified	Local Access 1	Residential	Yes	30	24	6	No							Yes
Hillingdon Road		Woodside Stanborough	30 mph	Speed and volume		0	0	0	0	198 Low	Unclassified	Local Access 2	Residential	Yes	24	19	5	No							Yes
North Approach		Woodside Stanborough	30 mph	Speed and volume		0.8	0.8	0	0	943 Medium	Unclassified	Local Access 2	Residential	Yes	28	23	5	No							Yes
Lower High Street	South	Central Watford & Oxhey	30 mph	None		3.6	3.4	0.2	0	Not measured but expected medium	Unclassified	Secondary Distributor	Mixed	Yes	0	Not measured but likely	Yes								Yes
Marlborough Road		Central Watford & Oxhey	30 mph	None		1.4	1.4	0	0	Not measured but expected medium	Unclassified	Secondary Distributor	Residential	Yes	0	Not measured but likely	No							Yes	
Oxhey Road		Central Watford & Oxhey	30 mph	None		0.6	0.6	0	0	Not measured but expected medium	C	Secondary Distributor	Residential	Yes	0	Not measured but likely	No							Yes	
Radlett Road	South	Central Watford & Oxhey	30 mph	None		1	0.8	0	0.2	Not measured but expected medium	Unclassified	Secondary Distributor	Limited	Yes	0	Not measured but likely	No							Yes	
Rosslyn Road		Central Watford & Oxhey	30 mph	None		0.4	0.4	0	0	Not measured but expected low	Unclassified	Local Access 1	Mixed	Yes	0	Not measured but likely	No							Yes	
Upton Road		Central Watford & Oxhey	30 mph	None		1.2	1.2	0	0	Not measured but expected high	A	Main Distributor	Mixed	Yes	0	Not measured but likely	Yes							Yes	
Bushey Mill Lane		Meriden Tudor	30 mph	None		1.8	1.6	0	0.2	Not measured but expected high	Unclassified	Secondary Distributor	Residential	Yes	0	Not measured but likely	Yes							Yes	
Colonial Way		Meriden Tudor	30 mph	None		0.8	0.6	0	0.2	Not measured but expected medium	Unclassified	Local Access 1	Mixed	Yes	0	Not measured but likely	No							Yes	
Garston Lane		Meriden Tudor	30 mph	None		1	0.4	0.2	0.4	Not measured but expected medium	Unclassified	Secondary Distributor	Residential	Yes	0	Not measured but likely	Yes							Yes	
Imperial Way		Meriden Tudor	30 mph	None		0.4	0.4	0	0	Not measured but expected medium	Unclassified	Local Access 1	Mixed	Yes	0	Not measured but likely	No							Yes	
Meriden Way		Meriden Tudor	30 mph	None		0.4	0.2	0	0.2	Not measured but expected medium	Unclassified	Secondary Distributor	Mixed	Yes	0	Not measured but likely	Yes							Yes	
The Gossamers		Meriden Tudor	30 mph	None		0.8	0.8	0	0	Not measured but expected medium	Unclassified	Secondary Distributor	Mixed	Yes	0	Not measured but likely	Yes							Yes	
York Way		Meriden Tudor	30 mph	None		0.2	0.2	0	0	Not measured but expected medium	Unclassified	Secondary Distributor	Mixed	Yes	0	Not measured but likely	Yes							Yes	
Cassio Road		Nascot Park	30 mph	None		1	1	0	0	Not measured but expected medium	Unclassified	Local Access 1	Residential	Yes	0	Not measured but likely	Yes							Yes	
Courtlands Drive	West	Nascot Park	30 mph	None		1.2	1	0	0.2	Not measured but expected medium	Unclassified	Secondary Distributor	Residential	Yes	0	Not measured but likely	Yes							Yes	
Devereux Drive		Nascot Park	30 mph	None		0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but likely	No							Yes	

Street					National Speed Limit Considerations					Hertfordshire Speed Limit Considerations										C12: Bus Route	
					Collision History (non 20mph) Average per year for 2012-2016				24hr Weekday Daily Vehicles (average if multiple days available)	Vehicle volume categorisation	Road classification	Road hierarchy	Roadside development	Presence of vulnerable users high	85th %ile 10am-4pm	Mean 10am -4pm	Difference	Maximum mean speed greater than 24mph			
Name	Section	HCC Electoral Division	Current Speed Limit (or scheduled 2017/18)	Traffic Survey Available?	Average number of collisions	Average number of slight severity	Average number resulting in fatalities	Number of seriously injured											Bus route	20 mph Suitable in Principle?	
Harford Drive		Nascot Park	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but likely	No	Yes		
Langley Road		Nascot Park	30 mph	None	1.4	1	0	0.4		Not measured but expected medium	C	Secondary Distributor	Residential	Yes		0	Not measured but likely	Yes	Yes		
Langley Way		Nascot Park	30 mph	None	0.8	0.6	0	0.2		Not measured but expected medium	C	Local Access 1	Residential	Yes		0	Not measured but likely	Yes	Yes		
Parkside Drive		Nascot Park	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but likely	No	Yes		
Ridge Lane		Nascot Park	30 mph	None	0.2	0.2	0	0		Not measured but expected medium	Unclassified	Secondary Distributor	Residential	Yes		0	Not measured but likely	Yes	Yes		
Stratford Road	west	Nascot Park	30 mph	None	0.2	0.2	0	0		Not measured but expected medium	Unclassified	Secondary Distributor	Residential	Yes		0	Not measured but likely	No	Yes		
Stratford Way		Nascot Park	30 mph	None	0.2	0.2	0	0		Not measured but expected medium	Unclassified	Secondary Distributor	Residential	Yes		0	Not measured but likely	Yes	Yes		
The Avenue		Nascot Park	30 mph	None	0.4	0.2	0	0.2		Not measured but expected medium	Unclassified	Secondary Distributor	Residential	Yes		0	Not measured but likely	Yes	Yes		
Courtlands Drive	East	North Watford	30 mph	None	1.4	1	0	0.4		Not measured but expected high	Unclassified	Secondary Distributor	Residential	Yes		0	Not measured but likely	Yes	Yes		
Gammons Lane		North Watford	30 mph	None	2.8	2.8	0	0		Not measured but expected high	Unclassified	Secondary Distributor	Residential	Yes		0	Not measured but likely	Yes	Yes		
Leavesden Road		North Watford	30 mph	None	1.6	1.4	0	0.2		Not measured but expected high	Unclassified	Secondary Distributor	Residential	Yes		0	Not measured but likely	Yes	Yes		
Leggatts Way		North Watford	30 mph	None	0.4	0.4	0	0		Not measured but expected medium	Unclassified	Local Access 1	Residential	Yes		0	Not measured but likely	Yes	Yes		
The Harebreaks		North Watford	30 mph	None	1	1	0	0		Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but likely	Yes	Yes		
Ascot Road	Access road	West Watford	30 mph	None	0.4	0.4	0	0		Not measured but expected medium	Unclassified	Local Access 1	Residential	Yes		0	Not measured but likely	Yes	Yes		
Croxley View	South	West Watford	30 mph	None	0.6	0.6	0	0		Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but likely	Yes	Yes		
Greenhill Crescent		West Watford	30 mph	None	0.4	0.4	0	0		Not measured but expected medium	Unclassified	Local Access 2	Residential	Yes		0	Not measured but likely	Yes	Yes		
Healey Road		West Watford	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but likely	No	Yes		
Vicarage Road	South	West Watford	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Secondary Distributor	Residential	Yes		0	Not measured but likely	Yes	Yes		
Ganders Ash		Woodside Stanborough	30 mph	None	0.2	0.2	0	0		Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but likely	Yes	Yes		
Hemming Way		Woodside Stanborough	30 mph	None	0.2	0.2	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but likely	No	Yes		
High Road	North	Woodside Stanborough	30 mph	None	0.8	0.8	0	0		Not measured but expected high	Unclassified	Secondary Distributor	Mixed	Yes		0	Not measured but likely	Yes	Yes		
Louvain Way		Woodside Stanborough	30 mph	None	0	0	0	0		Not measured but expected medium	Unclassified	Local Access 2	Residential	Yes		0	Not measured but likely	No	Yes		
The Brow		Woodside Stanborough	30 mph	None	0.2	0.2	0	0		Not measured but expected medium	Unclassified	Local Access 1	Mixed	Yes		0	Not measured but likely	Yes	Yes		
Albert Road	South	Central Watford & Oxhey	30 mph	None	0.6	0.6	0	0		Not measured but expected medium	Unclassified	Local Access 2	Mixed	Yes		0	Not measured but unlikely	No	Yes		
Bentline Lane		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Blenheim Close		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Brooklesbury Close		Central Watford & Oxhey	30 mph	None	0.2	0	0	0.2		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Cedar Road		Central Watford & Oxhey	30 mph	None	0.2	0.2	0	0		Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	No	Yes		
Ebury Road		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Firbank Drive		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Gaumont Approach		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 1	Mixed	Yes		0	Not measured but unlikely	No	Yes		
Halsey Road		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Mixed	Yes		0	Not measured but unlikely	No	Yes		
Kingsfield Court		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	No	Yes		
Kingsfield Road		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	No	Yes		
Lime Close		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Local Board Road		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Lower Derby Road		Central Watford & Oxhey	30 mph	None	0.2	0.2	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Monica Close		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
New Road		Central Watford & Oxhey	30 mph	None	0.2	0.2	0	0		Not measured but expected low	Unclassified	Local Access 2	Mixed	Yes		0	Not measured but unlikely	No	Yes		
Oakview Close		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Parkside		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	No	Yes		
Raphael Drive		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	Yes	Yes		
Shaftesbury Road		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Sheridan Road		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
St Pauls Way		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
The Larches		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Trinity Hall Close		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Wellstones		Central Watford & Oxhey	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Mixed	Yes		0	Not measured but unlikely	No	Yes		
Aldbury Close		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Arnwell Close		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Biddenham Turn		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Bovingdon Crescent		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Bowmans Green		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Bramfield		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Bushey Mill Crescent		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Butterwick		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Byron Avenue		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Carisbrooke Avenue		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Coates Dell		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	No	Yes		
Coates Way	South	Meriden Tudor	30 mph	None	0.2	0.2	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	Yes	Yes		
Codicote Drive		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	No	Yes		
Colne Way		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Cuffley Avenue		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	No	Yes		
Devon Road		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Eastfield Avenue		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	No	Yes		
Eastlea Avenue		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Fairfolds		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Felden Close		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		
Fifth Avenue		Meriden Tudor	30 mph	None	0	0	0	0		Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes		

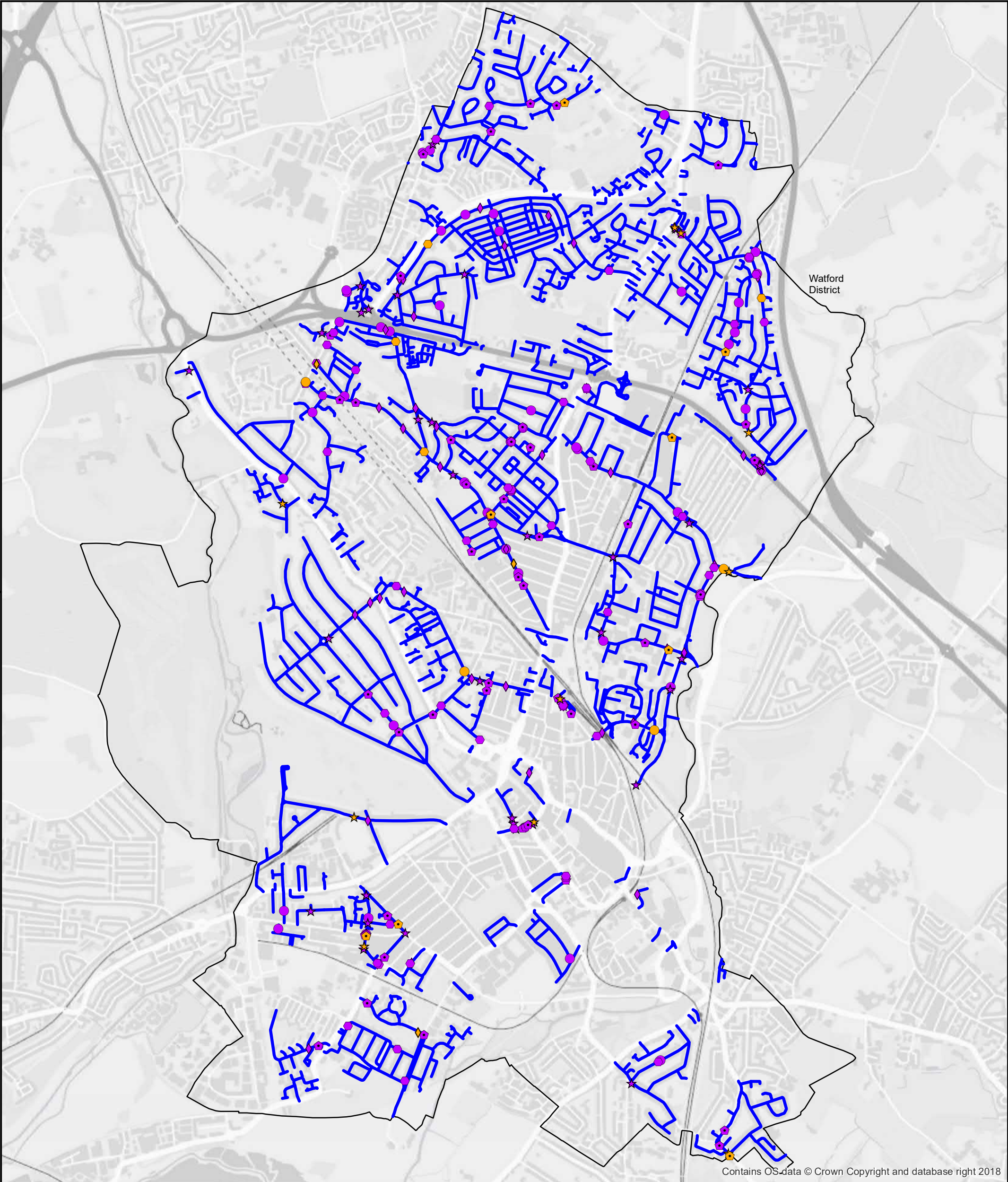
Street					National Speed Limit Considerations							Hertfordshire Speed Limit Considerations										C12: Bus Route	
					Collision History (non 20mph) Average per year for 2012-2016				Road User Composition			C6: Before Speed Data											
					Average number of collisions	Average number of slight severity	Average number resulting in fatalities	Number of seriously injured	24hr Weekday Daily Vehicles (average if multiple days available)	Vehicle volume categorisation	Road classification	Road hierarchy	Roadside development	Presence of vulnerable users high	85th %ile 10am-4pm	Mean 10am - 4pm	Difference	Maximum mean speed greater than 24mph	Bus route	20 mph Suitable in Principle?			
Name	Section	HCC Electoral Division	Current Speed Limit (or scheduled 2017/18)	Traffic Survey Available?																			
First Avenue		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected medium	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
Gaddesden Crescent		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
Gadswell Close		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Garsmouth Way		Meriden Tudor	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
Garston Park Parade		Meriden Tudor	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Greycaine Road		Meriden Tudor	30 mph	None	0.2	0	0	0.2	Not measured but expected medium	Unclassified	Local Access 2	Mixed	Yes	0	Not measured but unlikely	No	Yes						
Harvest End		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Holtmsere Close		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Livinghoe Close		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Kelshall		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Kilby Close		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
Kimpton Place		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Knutsford Avenue	North	Meriden Tudor	30 mph	None	0.2	0.2	0	0	Not measured but expected medium	Unclassified	Local Access 1	Mixed	Yes	0	Not measured but unlikely	Yes	Yes						
Kytes Drive		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
Lansdowne Close		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Lea Bushes		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Leander Gardens		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Mallard Way		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Munden Grove		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Norfolk Avenue		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Northfield Gardens		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Phillipers		Meriden Tudor	30 mph	None	1	0.8	0	0.2	Not measured but expected medium	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
Ravenscroft		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Reeds Crescent		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected medium	Unclassified	Local Access 1	Mixed	Yes	0	Not measured but unlikely	Yes	Yes						
Rhodes Way		Meriden Tudor	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 2	Mixed	Yes	0	Not measured but unlikely	No	Yes						
Second Avenue		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Sixth Avenue		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Southfield Avenue		Meriden Tudor	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
Tavistock Road		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Telford Close		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
The Meadows		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
The Pelhams		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
The Turnstones		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Third Avenue		Meriden Tudor	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Tibbles Close		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Westfield Avenue		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
Westlea Avenue		Meriden Tudor	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
Whitwell Road		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
Widgeon Way		Meriden Tudor	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Woodhurst Avenue		Meriden Tudor	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
Alexandra Road		Nascot Park	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes						
Beechpark Way		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Bellmount Wood Avenue		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Berceau Walk		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Blackley Close		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Bromet Close		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Capelvere Walk		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Coringesby Drive		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Cottage Close		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
De Vere Walk		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Dellfield Close		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Denewood Close		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Dowry Walk		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Elton Park		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Fairlawns		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Fairview Drive		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Gade Avenue		Nascot Park	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Garden Close		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Glen Way		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Grandfield Avenue		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Herga Court		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Kerilworth Court		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Kildonan Close		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Langwood Gardens		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Maple Grove		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Melrose Place		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Oaklands Court		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Orchard Close		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						
Pinewood Close		Nascot Park	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes						

Street					National Speed Limit Considerations					Hertfordshire Speed Limit Considerations												C12: Bus Route						
					Collision History (non 20mph) Average per year for 2012-2016					Road User Composition					C6: Before Speed Data													
					Average number of collisions	Average number of slight severity	Average number resulting in fatalities	Number of seriously injured	24hr Weekday Daily Vehicles (average if multiple days available)	Vehicle volume categorisation	Road classification	Road hierarchy	Roadside development	Presence of vulnerable users high	85th %ile 10am-4pm	Mean 10am -4pm	Difference	Maximum mean speed greater than 24mph										
Name	Section	HCC Electoral Division	Current Speed Limit (or scheduled 2017/18)	Traffic Survey Available?														Bus route	20 mph Suitable in Principle?									
Richmond Drive		Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Rosecroft Drive		Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Roughwood Close		Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Royal Court		Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Shepherds Road		Nascot Park	30 mph	None	0.2	0.2	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Stanbury Avenue		Nascot Park	30 mph	None	0.2	0	0	0	0.2	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Swiss Close		Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Temple Close		Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
The Drive		Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
The Gardens		Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
The Ridgeway	North	Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
The Ridgeway	South	Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Trefusis Walk		Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Wentworth Close		Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Wimborne Grove		Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Woodville Court		Nascot Park	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Aome Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Acorn Place		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Ash Tree Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Ashby Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Balmoral Road		North Watford	30 mph	None	0.4	0.2	0	0	0.2	Not measured but expected medium	Unclassified	Secondary Distributor	Residential	Yes	0	0	0	Not measured but unlikely	Yes	Yes								
Baxter Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Bedford Street		North Watford	30 mph	None	0.2	0.2	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Beech Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Beechwood Rise		North Watford	30 mph	None	0.4	0.2	0	0	0.2	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Berry Avenue		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Breakspere Close		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Brett Place		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Brighton Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Broad Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Brush Rise		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Cherry Tree Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Mixed	Yes	0	0	0	Not measured but unlikely	No	Yes								
Chesnut Walk		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Mixed	Yes	0	0	0	Not measured but unlikely	No	Yes								
Churchfields Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Comyne Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Courtlands Close		North Watford	30 mph	None	0.2	0.2	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Cowper Court		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Dell Road		North Watford	30 mph	None	0.2	0.2	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Dell Side		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Desmond Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Diamond Road		North Watford	30 mph	None	0.2	0.2	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Dodd Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Elm Grove		North Watford	30 mph	None	0.2	0.2	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Foxhill		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Fuller Gardens		North Watford	30 mph	None	0.2	0.2	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Gisburne Way		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Halsey Place		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Heather Lane		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Howard Close		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Hudson Close		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Jubilee Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Leggatts Close		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Leggatts Wood Avenue		North Watford	30 mph	None	0.2	0.2	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Lowestoft Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected medium	Unclassified	Secondary Distributor	Residential	Yes	0	0	0	Not measured but unlikely	Yes	Yes								
Maude Crescent		North Watford	30 mph	None	0.2	0.2	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Maytree Crescent		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Middle Way		North Watford	30 mph	None	0.6	0.6	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Nicholas Close		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Oakdene Road		North Watford	30 mph	None	0.2	0.2	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Rosebriar Walk		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Silver Dell		North Watford	30 mph	None	0.2	0.2	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
St George's Road		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Sussex Road		North Watford	30 mph	None	0.2	0.2	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
The Square		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Woodside		North Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Aynho Street		West Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Banbury Street		West Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Barclay Close		West Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								
Bramleas		West Watford	30 mph	None	0	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	0	0	Not measured but unlikely	No	Yes								

Street					National Speed Limit Considerations										Hertfordshire Speed Limit Considerations										C12: Bus Route	
					Collision History (non 20mph) Average per year for 2012-2016				Road User Composition						C6: Before Speed Data											
					Average number of collisions	Average number of slight severity	Average number resulting in fatalities	Number of seriously injured	24hr Weekday Daily Vehicles (average if multiple days available)	Vehicle volume categorisation	Road classification	Road hierarchy	Roadside development	Presence of vulnerable users high	85th %ile 10am-4pm	Mean 10am-4pm	Difference	Maximum mean speed greater than 24mph								
Name	Section	HCC Electoral Division	Current Speed Limit (or scheduled 2017/18)	Traffic Survey Available?														Bus route	20 mph Suitable in Principle?							
Caractacus Cottage View		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Caractacus Green		West Watford	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Cardiff Road		West Watford	30 mph	None	0.4	0.4	0	0	Not measured but expected medium	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Caxton Way		West Watford	30 mph	None	0	0	0	0	Not measured but expected medium	Unclassified	Local Access 2	Mixed	Yes	0	Not measured but unlikely	Yes	Yes		Yes							
Charlock Way		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Cherrydale		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Chesham Way		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Clifton Road		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Clyston Road		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Combe Road		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Crusader Way		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Explorer Drive		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
High View		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	Yes	Yes		Yes							
Himalayan Way		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Hodges Way		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Jellicoe Road		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Kelmscott Close		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Kelmscott Crescent		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
King George Avenue		West Watford	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Liverpool Road		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Moor View		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Oxford Street		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Pioneer Way		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Princes Avenue		West Watford	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Souldern Street		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
St James Road		West Watford	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Stripling Way		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
The Roundway		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Victoria Passage		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Westbury Road		West Watford	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Albans View		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Alder Walk		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
All Saints Crescent		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Ash Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Aspen Park Drive		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Avon Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Blackthorn Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Boundary Way		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Bramble Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Campion Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Cedar Wood Drive		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Cobb Green		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Crown Rise		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Derwent Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
East Drive		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Elderberry Way		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Ellwood Gardens		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Farmers Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Fern Way		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Florence Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Garston Crescent		Woodside Stanborough	30 mph	None	0.2	0	0	0.2	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Garston Drive		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Goodrich Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Gorle Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Grasmere Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Gullet Wood Road		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Gwent Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Harding Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Hare Crescent		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Haweswater Drive		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Hazel Grove		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Holland Gardens		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Hope Green		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Kenford Close		Woodside Stanborough	30 mph	None	0.2	0	0	0.2	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Lamb Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Lavinia Avenue		Woodside Stanborough	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Linden Lea		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Lingmoor Drive		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							
Loweswater Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes	0	Not measured but unlikely	No	Yes		Yes							

Street					National Speed Limit Considerations						Hertfordshire Speed Limit Considerations										
					Collision History (non 20mph) Average per year for 2012-2016			Road User Composition								C6: Before Speed Data				C12: Bus Route	
					Average number of collisions	Average number of slight severity	Average number resulting in fatalities	Number of seriously injured	24hr Weekday Daily Vehicles (average if multiple days available)	Vehicle volume categorisation	Road classification	Road hierarchy	Roadside development	Presence of vulnerable users high	85th %ile 10am-4pm	Mean 10am - 4pm	Difference	Maximum mean speed greater than 24mph	Bus route	20 mph Suitable in Principle?	
Name	Section	HCC Electoral Division	Current Speed Limit (or scheduled 2017/18)	Traffic Survey Available?																	
Lynch Gate		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Meadow Road		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected medium	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Medway Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Milner Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Moss Road		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Newhouse Crescent		Woodside Stanborough	30 mph	None	0.6	0.4	0	0.2	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	Yes	Yes			
Orbital Crescent		Woodside Stanborough	30 mph	None	0.4	0.4	0	0	Not measured but expected low	Unclassified	Local Access 2	Mixed	Yes		0	Not measured but unlikely	No	Yes			
Orchard Avenue		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Perivale Gardens		Woodside Stanborough	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Poplars Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Purbrook Avenue		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Queenswood Crescent		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Ross Crescent		Woodside Stanborough	30 mph	None	0	0	0	0	Low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Rother Close		Woodside Stanborough	30 mph	None	0	0	0	0	Low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Severn Way		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected medium	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	No	Yes			
Sheepcot Drive		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	No	Yes			
Sheepcot Lane		Woodside Stanborough	30 mph	None	1.6	1.4	0	0.2	Not measured but expected medium	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	Yes	Yes			
Spring Gardens		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
St Michaels Drive		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Stud Green		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Summerfield Road		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 1	Residential	Yes		0	Not measured but unlikely	No	Yes			
Sycamore Close		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
The Glebe		Woodside Stanborough	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
The Pippins		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Trevellance Way		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Valley Rise		Woodside Stanborough	30 mph	None	0.2	0.2	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Weall Green		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
West Drive		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Westwick Place		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Wheatley Drive		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Woodgate		Woodside Stanborough	30 mph	None	0	0	0	0	Not measured but expected low	Unclassified	Local Access 2	Residential	Yes		0	Not measured but unlikely	No	Yes			
Swiss Avenue		Nascot Park	30 mph	Speed and volume	0	0	0	0	2038 Medium	Unclassified	Local Access 1	Residential	Yes	34	28	6	Yes	Yes	Yes		
Woodland Drive		Nascot Park	30 mph	Speed and volume	0	0	0	0	1274 Medium	Unclassified	Local Access 1	Residential	Yes	33	27	6	Yes	No	Yes		
Chilcott Road		North Watford	30 mph	Speed and volume	0.2	0.2	0	0	2829 High	Unclassified	Local Access 2	Residential	Yes	33	26	7	Yes	No	Yes		
Scammell Way		West Watford	30 mph	Speed and volume	0.6	0.4	0	0.2	1761 Low	Unclassified	Local Access 1	Residential	Yes	30	25	5	Yes	Yes	Yes		
Evans Avenue		Woodside Stanborough	30 mph	Speed and volume	0	0	0	0	1535 Medium	Unclassified	Local Access 2	Residential	Yes	32	27	5	Yes	No	Yes		
Greenwood Drive		Woodside Stanborough	30 mph	Speed and volume	0.6	0.6	0	0	1567 Medium	Unclassified	Local Access 2	Residential	Yes	31	26	5	Yes	No	Yes		
Harris Road		Woodside Stanborough	30 mph	Speed and volume	0.2	0.2	0	0	1071 Medium	Unclassified	Local Access 2	Residential	Yes	30	25	5	Yes	Yes	Yes		
Kingswood Road		Woodside Stanborough	30 mph	Speed and volume	0	0	0	0	716 Low	Unclassified	Local Access 1	Residential	Yes	30	26	4	Yes	Yes	Yes		
Leggatts Rise		Woodside Stanborough	30 mph	Speed and volume	0	0	0	0	605 Low	Unclassified	Local Access 2	Residential	Yes	33	28	5	Yes	No	Yes		
Rushton Avenue		Woodside Stanborough	30 mph	Speed and volume	0	0	0	0	835 Medium	Unclassified	Local Access 1	Residential	Yes	29	25	4	Yes	Yes	Yes		

B. Appendix B: Collision data analysis



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Key to Symbols

Year, Severity, (Amount)

- 2013, Serious, (4)
- 2013, Slight, (53)
- ◆ 2014, Serious, (3)
- ◆ 2014, Slight, (50)
- ★ 2015, Serious, (10)
- ★ 2015, Slight, (42)

- ◆ 2016, Serious, (8)
- ◆ 2016, Slight, (55)
- ◆ 2017, Serious, (4)
- ◆ 2017, Slight, (45)

Proposed (residential)

- 20 mph
- Watford District boundary

Roads marked indicatively. Any future 20 mph scheme would be subject to detailed assessment/design and include public highway only

Watford Borough Council OS Licence: 100018689
Speed Data - OS Highways with Speeds - 2018

Drawn
CW

Checked
CH

Approved
MR

Status
Fnl

Rev
P03

Map Name

Study Area - Option 1a

Project

Watford Accident Analysis

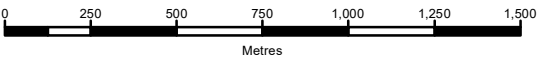
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Scale at A3: 1:22,000



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Date: 24/09/18

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